

SHARP SERVICE MANUAL

No. S3118MDMT877/



PORTABLE MINIDISC RECORDER

MD-MT877(S)

MODEL MD-MT877C(S)


MDLP

• In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.

CONTENTS

| | Page |
|--|------|
| SPECIFICATIONS | 2 |
| NAMES OF PARTS | 3 |
| OPERATION MANUAL | 5 |
| DISASSEMBLY | 10 |
| REMOVING AND REINSTALLING THE MAIN PARTS | 11 |
| ADJUSTMENT | 12 |
| NOTES ON SCHEMATIC DIAGRAM | 28 |
| TYPES OF TRANSISTOR AND DIODE | 28 |
| BLOCK DIAGRAM | 29 |
| SCHEMATIC DIAGRAM | 30 |
| WIRING SIDE OF P.W.BOARD | 32 |
| VOLTAGE | 36 |
| WAVEFORMS OF MD CIRCUIT | 37 |
| TROUBLESHOOTING | 38 |
| FUNCTION TABLE OF IC | 41 |
| PARTS GUIDE/EXPLODED VIEW | |
| PACKING OF THE SET (MD-MT877(S) FOR U.S.A. ONLY) | |

MD-MT877/MD-MT877C

FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

SPECIFICATIONS

| | | | |
|---------------------------|---|-----------------|---------------------------|
| Power source | DC 1.2V: Rechargeable Nickel-Metal Hydride battery (AD-N55BT) x 1 DC 5V: AC adaptor (AC 120V, 60 Hz) DC 1.5V: Commercially available, "AA" size (LR6), alkaline battery x 1 DC 1.5V: Separately available car adaptor, AD-CA55X (for cars with a 12-24V DC negative ground electrical system) (Used with separately available plug adaptor (AD-M66PA)) | | |
| Power consumption | 7 W (AC adaptor) | | |
| Output power | RMS; 10 mW (5 mW + 5 mW) (0.2% T.H.D.) | | |
| Charging time | Approx. 3.5 hours | | |
| Input sensitivity | MIC H: reference input level | 0.25 mV | input impedance 10 k ohms |
| | MIC L: reference input level | 2.5 mV | input impedance 10 k ohms |
| | LINE: reference input level | 100 mV | input impedance 20 k ohms |
| Output level | Earphones: maximum output level | 5 mW + 5 mW | load impedance 32 ohms |
| | LINE: specified output | 250 mV (-12 dB) | load impedance 10 k ohms |
| Dimensions | Width: 2-27/32" (71.9 mm) Height: 11/16" (16.8 mm) Depth: 3-1/8" (78.7 mm) | | |
| Weight | 0.29 lbs. (131 g) with rechargeable battery | | |
| Input jack | Line/optical digital, microphone (powered by the main unit) | | |
| Output jack | Earphones (impedance: 32 ohms)/remote control unit | | |
| Type | Portable MiniDisc recorder | | |
| Signal readout | Non-contact, 3-beam semiconductor laser pickup | | |
| Audio channels | Stereo 2 channels/monaural (long-play mode) 1 channel | | |
| Frequency response | 20 – 20,000 Hz (± 3 dB) | | |
| Rotation speed | Approx. 400 – 1,350 rpm | | |
| Error correction | ACIRC (Advanced Cross Interleave Reed-Solomon Code) | | |
| Coding | ATRAC/ATRAC3 (Adaptive TRAnsform Acoustic Coding), 24-bit computed type | | |
| Recording method | Magnetic modulation overwrite method | | |
| Sampling frequency | 44.1 kHz (32 kHz and 48 kHz signals are converted to 44.1 kHz, and then recorded.) | | |
| Wow and flutter | Unmeasurable (less than ±0.001% W. peak) | | |


Battery life

| | Stereo | | 2 times long | | 4 times long | |
|---|---|-----------------------------------|--|-------------------------------------|--|-----------------------------------|
| When using the rechargeable battery (fully charged) included with the unit | Continuous recording: Approx. 6.5 hours | Continuous play: Approx. 12 hours | Continuous recording: Approx. 9 hours | Continuous play: Approx. 13.5 hours | Continuous recording: Approx. 11.5 hours | Continuous play: Approx. 15 hours |
| When using one, commercially available, high capacity, "AA" size (LR6), alkaline battery (The rechargeable battery is in the unit, discharged.) | Continuous recording: Approx. 6 hours | Continuous play: Approx. 16 hours | Continuous recording: Approx. 10 hours | Continuous play: Approx. 19.5 hours | Continuous recording: Approx. 13 hours | Continuous play: Approx. 22 hours |
| When using one, commercially available, high capacity, "AA" size (LR6), alkaline battery with the rechargeable battery (fully charged) | Continuous recording: Approx. 15 hours | Continuous play: Approx. 29 hours | Continuous recording: Approx. 22 hours | Continuous play: Approx. 33 hours | Continuous recording: Approx. 30 hours | Continuous play: Approx. 40 hours |

- The above values are the standard values when the unit is operated horizontally and charged at an ambient temperature of 77°F (25°C). (The operable duration with the rechargeable battery will be shorter when the unit is carried around.)

- The volume level is set at "VOL 15".
- The LED is set at "LIGHT OFF".

- Operable duration with a commercially available battery varies depending on its maker, type, and conditions of use.

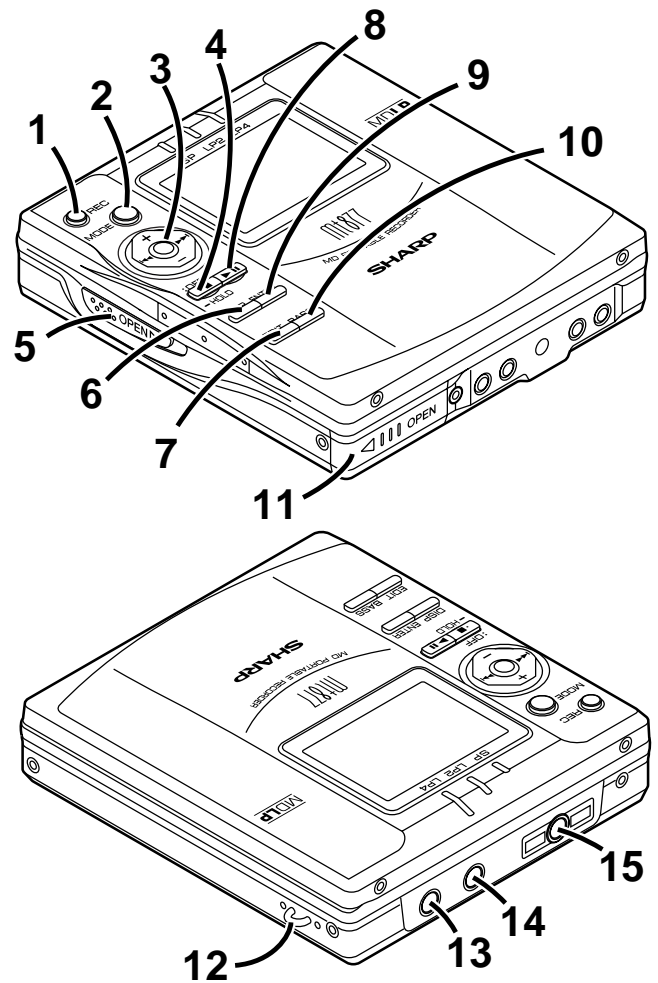
- "Fully charged" means that the charging is complete after approximately 3.5 hours since the remaining amount of the battery is reduced to "  " (1 bar).

Specifications for this model are subject to change without prior notice

NAMES OF PARTS

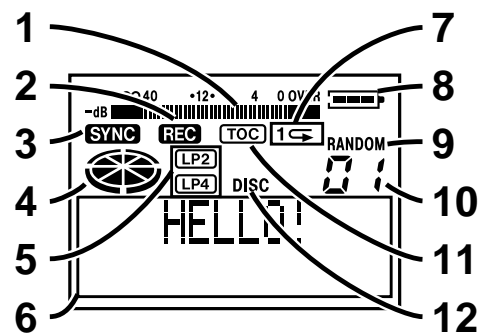
Main unit

1. Record/Track Mark Button
2. Mode Button
3. Volume/Cursor/Fast Forward/Fast Reverse/Recording Level/Name Select Button
4. Stop/Power Off/Hold Button
5. Open Lever
6. Display/Character Select Button
7. Edit/Auto Mark/Time Mark Button
8. Play/Pause Button
9. Enter/Fast Play/Synchro Button
10. Bass/Delete Button
11. Rechargeable Battery Cover
12. Handstrap Holder
13. Optical/Line Input Jack
14. Microphone Input Jack
15. Remote Control/Earphones/Line Output Jack



Main unit display panel

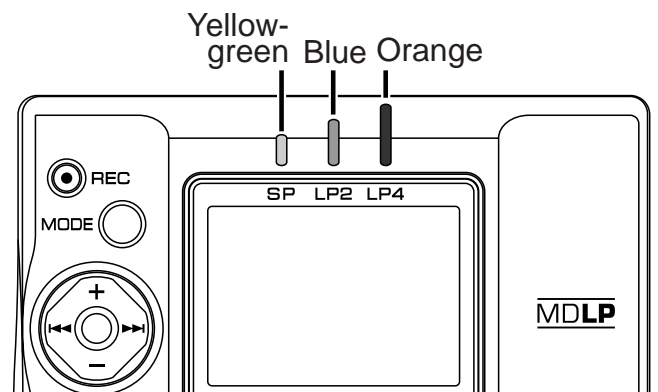
1. Level Meter
2. Record Indicator
3. Synchro Recording Indicator
4. Operation Indicator
5. Long-play/Recording Mode Indicator
6. Character/Time Information Indicator
7. Repeat Indicator
8. Battery Indicator
9. Random Indicator
10. Track Number Indicator
11. TOC Indicator
12. Disc Name Indicator



3-color LED

Various modes are indicated with three colors of lights.

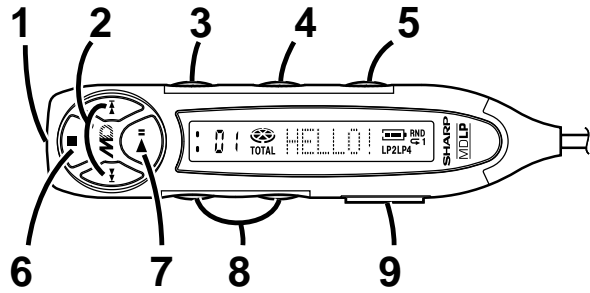
| | |
|---------------------|--|
| Charging | Lighting starting with yellow-green light. |
| Refresh | Extinguishing starting with orange light after all the lights are lit. |
| Playback | Flashing the color of the activated playback mode. |
| Recording | Flashing the color of the activated recording mode. |
| Fast Forward | Flashing starting with yellow-green light. |
| Fast Reverse | Flashing starting with orange light. |
| Volume (+) | Lighting starting with yellow-green light. |
| Volume (-) | Extinguishing instantly starting with orange light after all the lights are lit. |
| TOC | Reading: flashing at random. |



MD-MT877/MD-MT877C

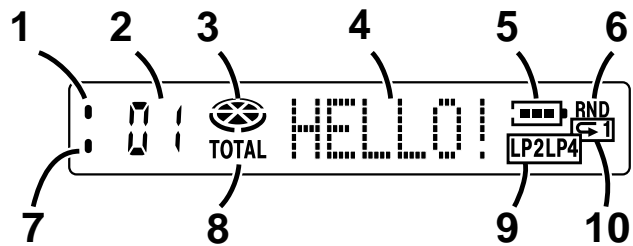
Remote control unit

1. Earphones Jack
2. Fast Forward/Fast Reverse Button
3. Display Button
4. Play Mode Button
5. Sound/Track Mark Button
6. Stop/Power Off Button
7. Play/Pause Button
8. Volume Button
9. Hold Switch



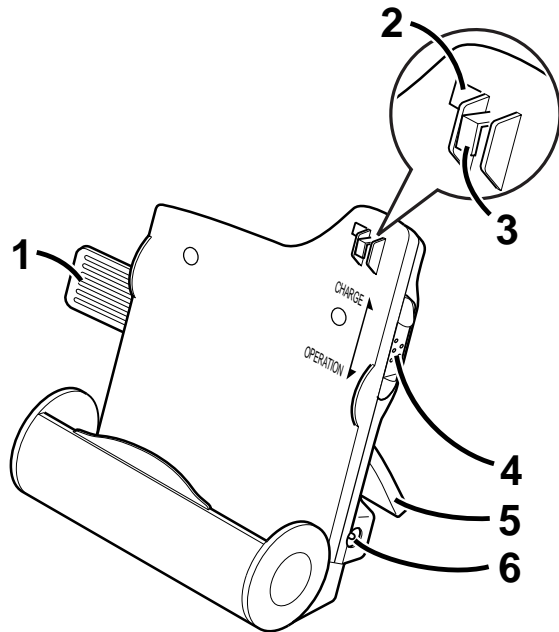
Remote control display panel

1. Record Indicator
2. Track Number Indicator
3. Operation Indicator
4. Character/Time Information Indicator
5. Battery Indicator
6. Random Indicator
7. Synchro Recording Indicator
8. Total Track Number Indicator
9. Long-play/Recording Mode Indicator
10. Repeat Indicator



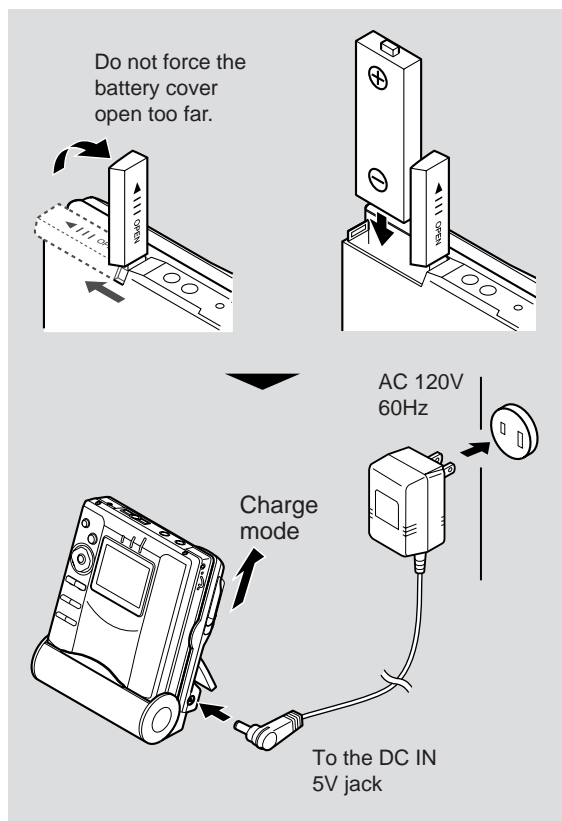
Battery charger

1. Remote Control Holder (You can hang the remote control on it.)
2. Lock Detector
3. Hook For Fixing The Main Unit
4. Charge/Operation Switch
5. Stand
6. AC Adaptor Connecting Jack



OPERATION MANUAL

Using with the Rechargeable Battery

**Charging**


When the rechargeable battery is used for the first time or when you want to use it after a long period of disuse, be sure to charge it fully.

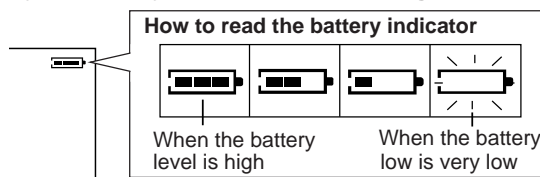
- 1** Insert the rechargeable battery.
- 2** Move the Charge/Operation switch to charge mode.
- 3** Place the portable MD into the battery charger and connect the AC adaptor.

- After the rechargeable battery is charged or used, it will get slightly warm. This is normal.
- When the portable MD is turned on or operating, the battery will not be charged.

Checking Displays


Checking the remaining amount of battery level

The remaining amount of battery level is shown by the battery indicator () during operation.



- When the battery is completely discharged, the battery indicator will flash. Recharge the battery or replace the alkaline battery with a new one.
- When the battery has run completely out, "BATT EMPTY (LoBATT)" will appear. Then, the power will be disconnected automatically.

Notes:

- If you use the battery which you stopped charging halfway, "" may appear. It does not mean that the battery is completely charged.
- The battery indicator will not correctly display the remaining capacity for approximately 20 seconds after the power has been turned on.
- When the AC adaptor or a separately available car adaptor is used, the battery indicator will not be shown.
- The number of bars shown in the battery indicator may increase or decrease, depending on the operation being performed. This is normal.

Error Messages

| ERROR MESSAGES | MEANING | REMEDY |
|---|--|---|
| BATT EMPTY (LoBATT) | ● The battery is run down. | ● Charge the rechargeable battery or replace the alkaline battery (or use the AC adaptor for power). |
| BLANK MD (BLANK) | ● Nothing is recorded. | ● Replace the disc with a recorded disc. |
| Can't COPY (Can'tC) | ● You tried to record from a copy prohibited MiniDisc. | ● Record using the analog cable. (MD-MT877(S)) ● Record using the analogue cable. (MD-MT877C(S)) |
| Can't EDIT (Can'tE) | ● A track cannot be edited. | ● Change the stop position of the track and then edit it. |
| Can't READ * (Can'tS) (Can'tT) (Can'tU) | ● The disc data cannot be read because the disc is damaged. | ● Reload the disc. ● Replace it with another recorded disc. |
| Can't REC (Can'tR) | ● Recording cannot be performed correctly due to vibration or shock. | ● Re-record or replace it with another recordable disc. |
| Can't STAMP | ● Stamp function does not work. | ● Check the number of tracks. |
| Can't WRITE (Can'tW) | ● Cannot save the TOC information correctly to a MiniDisc. (A large portion of the disc has been damaged.) | ● Replace the disc with another recordable disc. |
| CHARGE mode | ● The Charge/Operation switch is not set to the operation mode when using this unit with the AC adaptor. | ● Set the Charge/Operation switch to the operation mode. |
| DEFECT (DEFECT) | ● The disc is scratched. | ● If the sound you hear is not right, record again. ● Replace the disc with another recordable disc. |
| DISC FULL | ● The disc is out of recording space. | ● Replace it with another recordable disc. |
| Er-MD ** (ErMD*) | ● The microprocessor has reported a system fault and the unit is out of order. | ● To have it repaired, go to the distributor where you purchased the unit. |
| HOLD (HOLD) | ● The unit is in the hold mode. | ● Return the HOLD switch to its original position. |
| LOCKED (Can'tLOCK) | ● You removed a MiniDisc while recording or editing. | ● Turn off the power and remove the MiniDisc. |

| ERROR MESSAGES | MEANING | REMEDY |
|---------------------------------|---|---|
| NO DISC | ● A disc has not been loaded. | ● Load a disc. |
| NO SIGNAL (noSIG.) | ● Poor connection of the digital cable. ● No output signal comes out from the connected unit to playback. ● The input signal has improper sampling frequency. | ● Connect the digital cable securely. ● If the portable CD player has a function to prevent sound skips, deactivate it. ● Playback with the connected unit. |
| PLAY MD (PLAYmd) | ● You recorded on a playback-only disc. | ● Replace it with a recordable disc. |
| POWER ? | ● The battery charger is defective. | ● To have it repaired, go to the distributor where you purchased the unit. |
| PROTECTED | ● The write protection tab of a MiniDisc is set to the protected position. ● You tried to record on a playback-only disc. | ● Move the write protection tab back to its original position. ● Replace it with a recordable MiniDisc. |
| SORRY (Sorry) | ● Since a track number is currently being located or updated, the unit cannot accept your command. | ● Wait for a while and try the operation again. |
| TEMP OVER (TEMP!) | ● The temperature is too high. | ● Turn off the power, and wait for a while. |
| TOC FORM ** (Tform**) | ● There is an error in the recording signal. | ● Erase all of the tracks, and then record again. |
| TOC FULL | ● There is no space left for recording character information (track names, disc names, etc.). | ● Replace it with another recordable disc. |
| Tr. Protect | ● The track has been protected from being erased. | ● Edit the track with the device on which it was recorded. |
| ? DISC (? DISC) | ● A disc which contains data other than music was played. ● There is an error in the signal recorded on the disc. ● Stamping is not possible. | ● A disc which contains non-music data cannot be played. ● Replace it with another recorded disc. ● Retry. |

() : Error messages seen on the remote control.
Number or symbol appears in * position.

MiniDisc System Limitations

The unit may have the following symptoms while recording or editing. The unit is not out of order.

| SYMPTOM | LIMITATIONS |
|--|---|
| “DISC FULL” or “TOC FULL” appears even though the MiniDisc still has recording time left. | More than 255 tracks (maximum) cannot be recorded regardless of the recording time. If the MiniDisc is recorded or edited repeatedly or if it has scratches (recording skips scratched parts), you may not be able to record the maximum tracks above. |
| The remaining recording time does not increase even though you erased tracks. | The unit does not count non-recorded portions that last 12 or fewer seconds to display the remaining recording time. The time may not increase even if you erase short tracks. |
| The total of the recorded time and the remaining time does not match the maximum recordable time. | One cluster (approximately 2 seconds) is the minimum unit for recording. For example, a 3-second track uses 2 clusters (approximately 4 seconds). Therefore, the actual recordable time may be shorter than the displayed time. |
| Combine function does not work. | A MiniDisc on which recording and editing are repeated may not allow the combine function. |
| Sound skips in fast reverse/forward. | One track is divided and recorded in separate places on a repeatedly recorded or edited MiniDisc. Sound may skip. |
| A track number is created in the middle of a track. | A track number may be created if there are scratches or dust on the MiniDisc. |

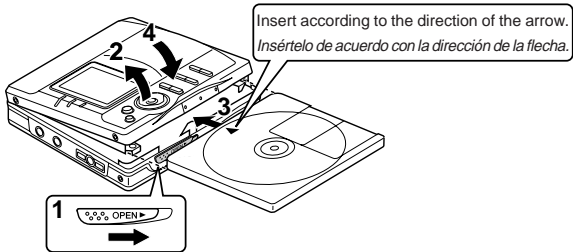
Troubleshooting

Many potential “problems” can be resolved by the owner without calling a service technician.

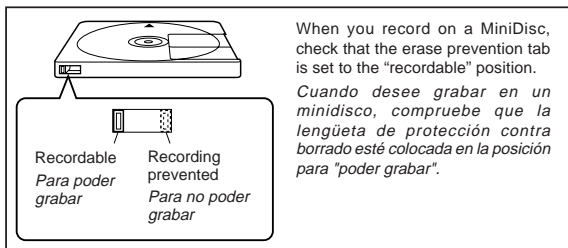
If something seems to be wrong with this product, check the following before calling your authorized SHARP dealer or service center.

| PROBLEM | CAUSE | PROBLEM | CAUSE |
|---|---|---|--|
| The unit does not turn on. | <ul style="list-style-type: none"> ● Is the AC adaptor disconnected? ● Is the battery exhausted? ● Is the unit in the hold mode? ● Has condensation formed inside the unit? ● Is the unit being influenced by mechanical shock or by static electricity? | The MiniDisc cannot be ejected. | <ul style="list-style-type: none"> ● Has the track number or character information been updated on the disc yet? ● Is the unit in the recording or editing mode? |
| No sound is heard from the earphones. | <ul style="list-style-type: none"> ● Is the volume set too low? ● Is the remote control unit or the earphones plugged in? ● Are you trying to play a MiniDisc with data on it instead of a MiniDisc containing music? | Recording and editing are impossible. | <ul style="list-style-type: none"> ● Is the MiniDisc protected against accidental erasure? ● Is the unit connected properly to the other equipment? ● Is the AC adaptor unplugged or did a power failure occur while recording or editing? ● Is the unit in the hold mode? ● Is an optical signal being output from the stereo system? Read the operation manual for the stereo system. |
| When the operation buttons are pressed, the unit does not respond. | <ul style="list-style-type: none"> ● Is the unit in the hold mode? ● Is the battery exhausted? ● Is the remote control unit plug or the earphones plug inserted firmly? | The battery cannot be charged. | <ul style="list-style-type: none"> ● Is the select switch for charging/operation set on the charging side? ● Is the jack clean? |
| Some sounds are skipped. | <ul style="list-style-type: none"> ● Is the battery exhausted? ● Is the unit being subjected to excessive vibration? | Nothing appears on the remote control display. | <ul style="list-style-type: none"> ● Is the remote control display set to “LIGHT OFF”? |

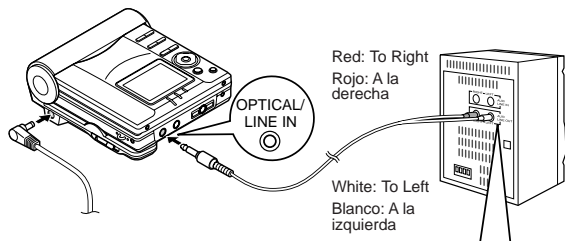
1 Insert a MiniDisc Inserte un minidisco



- Slide the OPEN lever to release the compartment door.
Deslice la palanca OPEN para abrir la puerta del compartimiento.
- Lift it up.
Levantelo.
- Insert a MiniDisc as shown.
Inserte un minidisco como se muestra.
- Close the compartment.
Cierre el compartimiento.



3 Connection Conexión



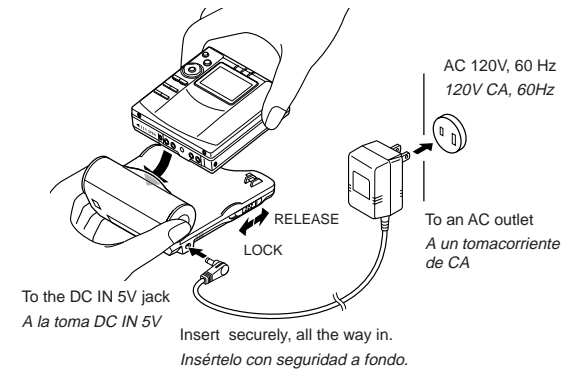
LINE OUT
RIGHT LEFT

To a stereo system with "LINE OUT" or "AUDIO OUT" jacks (See left. Analog connection)
Note:
If the audio system has only one pair of jack then they are usually input only and recording via this connection is not possible.

A un sistema estéreo provisto de tomas de salida de línea "LINE OUT" o de salida de audio "AUDIO OUT" (Vea a la izquierda, Conexión analógica)

Nota:
Si el sistema de audio sólo tiene un par de tomas, normalmente son sólo de entrada y no puede realizarse la grabación mediante esta conexión.

2 Connect the AC adaptor Conecte el adaptador de CA



- Move the Charge/Operation switch to Charge mode (RELEASE).
Mueva el selector de carga/operación al modo de carga (RELEASE).
- Insert the portable MD into the battery charger.
Inserte el MD portátil en el cargador de baterías.
- Move the Charge/Operation switch to Operation mode (LOCK).
Mueva el selector de carga/operación al modo de operación (LOCK).
- Plug the AC adaptor.
Enchufe el adaptador de CA.

Before using the unit with a rechargeable battery, the battery has to be charged. Refer to "Using with the rechargeable battery".
Antes de emplear el aparato con una batería recargable, se deberá cargar la batería. Consulte el apartado de "Empleo con la batería recargable".

Preparation for use Preparación para su utilización

The unit does not work if the ■/—HOLD button is set to HOLD.
Este aparato no funciona si el botón ■/—HOLD está puesto en HOLD.

Press the ■/—HOLD button for 2 seconds or more.
Pulse el botón ■/—HOLD durante 2 o más segundos.

| | | |
|-------------------|---|------------------------|
| HOLD ON | ↔ | HOLD OFF |
| Hold Retención | | Released Liberación |

**For operations
Para operaciones**

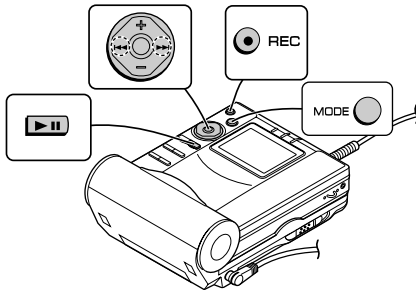
Move it to operation mode when playing back or recording.
Muévalo a la posición del modo de operación para la reproducción o grabación.

CAUTION:
It is not recommendable to put the MiniDisc into a rear pocket, as this may damage the product when sitting.

PRECAUCIÓN:
No se recomienda ponerse un minidisco en el bolsillo trasero del pantalón, porque podría dañarlo al sentarse.

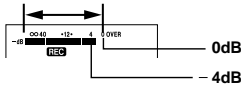
Recording Grabación

Check that the unit is connected to the stereo system.
Compruebe que el aparato esté conectado al sistema estéreo.



- 1 Press the REC button.**
Pulse el botón REC.
- 2 Begin playback on the stereo system connected to this unit.**
Inicie la reproducción en el sistema estéreo conectado a este aparato.
- 3 Press the ◀▶ or ▶▶ button to adjust the recording level.**
Adjust the recording level so that the maximum sound volume from the source makes the reading swing somewhere between -4 dB and 0 dB.
Pulse el botón ◀▶ o ▶▶ para ajustar el nivel de grabación.
Ajuste el nivel de grabación para que el volumen de sonido máximo de la fuente produzca una indicación de entre -4 dB y 0 dB.

Level meter indicator
Indicador del medidor de nivel



- 4 Press the PAUSE button on the stereo system to enter the playback pause mode at the point you wish to start recording.**
Pulse el botón PAUSE del sistema estéreo para entrar en el modo de pausa de reproducción en el punto en el que desee iniciar la grabación.
- 5 Press the MODE button repeatedly to select the recording mode.**
Pulse repetidamente el botón MODE para seleccionar el modo de grabación.
- 6 Press the ▶▶ button to start recording.**
Pulse el botón ▶▶ para iniciar la grabación.
- 7 Begin playback on the stereo system, the output will be recorded.**
Inicie la reproducción del sistema estéreo, y se grabará la salida.

To stop recording

Press the ◼/ :OFF button.

When recording stops, "TOC" appears (Table Of Contents). While "TOC" appears, the MiniDisc recorded contents have not yet been updated.

Para detener la grabación

Pulse el botón ◼/ :OFF.

Cuando se detenga la grabación, aparecerá "TOC" (índice). Mientras aparece "TOC", aún no se habrá actualizado el contenido grabado en el MD.

To update the recorded contents of the MiniDisc

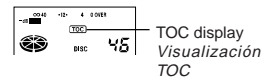
Press the ◼/ :OFF button while in the stop mode.

The power turns off after recorded contents have been updated on the MiniDisc.

Para actualizar el contenido grabado del MD

Pulse el botón ◼/ :OFF en el modo de parada.

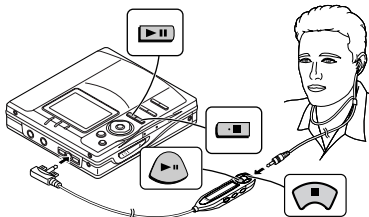
La alimentación se desconectará después de haber actualizado el contenido grabado en el MD.



TOC display
Visualización
TOC



Playing Reproducción



- 1 Insert the earphones plug firmly into the earphones jack on the remote control unit.**
Inserte firmemente la clavija de los auriculares en la toma de auriculares del controlador remoto.
- 2 Plug the remote control into the ⌚ jack on the unit.**
Enchufe el controlador remoto a la toma (⌚) del aparato.
- 3 Insert a MiniDisc.**
Inserte un MD
- 4 Press the ▶▶ button.**
Pulse el botón ▶▶.

To stop playback

Press the ◼/ :OFF button (Remote control: press the ◼ button).

If the unit is not operated for at least 2 minutes while in the stop mode, the power will shut off automatically.

Para detener la reproducción

Pulse el botón ◼/ :OFF. (Controlador remoto: pulse el botón ◼.)

Si el aparato no se utiliza durante un mínimo de 2 minutos en el modo de parada, la alimentación se desconectará automáticamente.

DISASSEMBLY

Cares before disassembling

When assembling the machine after disassembling or repair, observe the following requirements so as to ensure safety and performance.

1. Remove the batteries from the machine, and take out the mini-disc.
2. When assembling after repair, be sure to position the wires in the same location.
Use the specified screws to fix the cabinet and the mechanism unit. The use of the screws with length other than specified may cause contact with the mechanism unit resulting in malfunction.
3. When repairing, pay close attention so not to damage the IC from static electricity.

| STEP | REMOVAL | PROCEDURE | FIGURE |
|------|----------------|---|--------------|
| 1 | Bottom Cabinet | 1. Screw (A1) x5 | 10-1 |
| 2 | Top Cabinet | 1. Open the Top cabinet. 2. Screw (B1) x4 3. Flexible PWB (B2) x1 | 10-1 10-2 |
| 3 | Main PWB | 1. Open the rechargeable battery compartment of the direction indicated by arrows. 2. Screw (C1) x1 3. Flexible PWB (C2) x2 | 10-2 |
| 4 | MD Mechanism | 1. Pull the main frame to the A direction and remove the MD mechanism upward. 2. Screw (D1) x1 | 10-3 |
| 5 | LCD PWB | 1. Screw (E1) x6 2. Hook (E2) x4 | 10-4 |

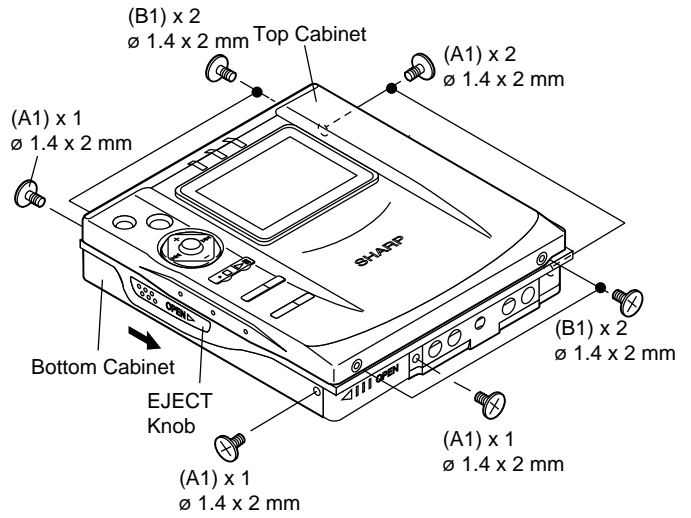
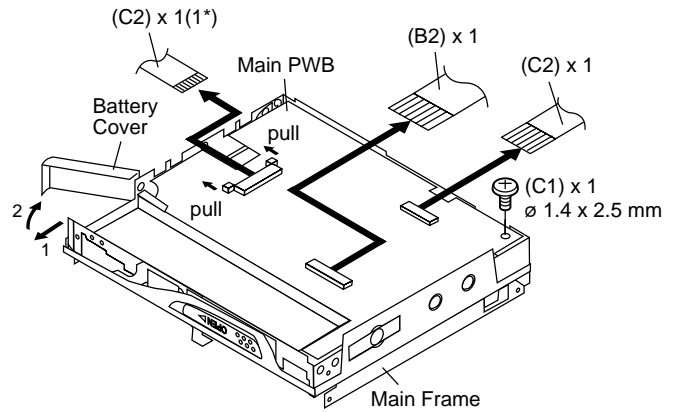


Figure 10-1



Caution:

Carefully handle the main PWB and flexible PWB. After removing the flexible PWB (1*) for the optical pickup from the connector, do not touch directly the front end of flexible PWB with your hand so as to prevent damage of optical pickup by static electricity.

Figure 10-2

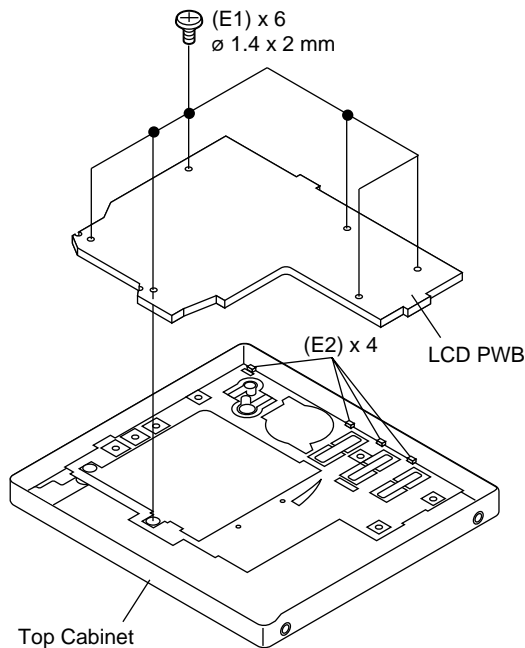


Figure 10-4

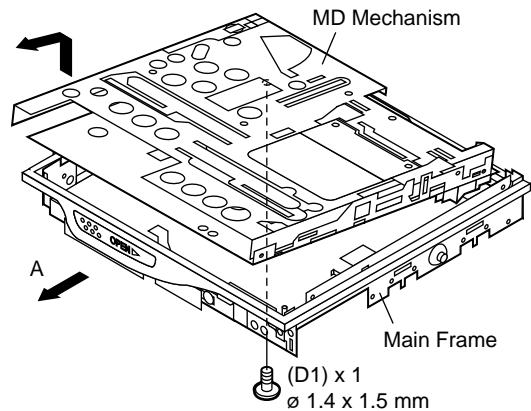


Figure 10-3

REMOVING AND REINSTALLING THE MAIN PARTS

Remove the mechanism according to the disassembling methods 1 to 4. (See Page 10.)

How to remove the spindle motor (See Fig. 11-1.)

1. Remove the solder joints (A1) x 4 of flexible PWB.
2. Remove the screws (A2) x 3 pcs., and remove the spindle motor.

How to remove the lift motor (See Fig. 11-2.)

1. Remove the solder joints (B1) x 2 of lift motor lead wire.
2. Remove the screw (B2) x 1 pc., and remove the lift motor.

Note:

Take care so that the motor gear is not damaged.
(If the gear is damaged, noise is caused.)

How to remove the sled motor (See Fig. 11-3.)

1. Remove the stop washer (C1) x 1 pc., and remove the drive gear (C2) x 1 pc.
2. Remove the screws (C3) x 2 pcs.
3. Remove the solder joints (C4) x 3 of flexible PWB., and remove the sled motor.

Note:

Take care so that the motor gear is not damaged.
(If the gear is damaged, noise is caused.)

How to remove the magnetic head (See Fig. 11-4.)

1. Remove the screws (D1) x 2 pcs. of the magnetic head and the optical pickup, and remove the solder joints (D2) x 2 pcs. of the head flexible plate.

Note:

Mount carefully so as not to damage the magnetic head.

How to reinstall the optical pickup (See Fig. 11-4.)

1. Remove the screw (E1) x 1 pc., and remove the grip spring.
2. Remove the screw (E2) x 1 pc. to remove the thrust spring, and remove the drive screw and the optical pickup from MD mechanism.
Then, remove the drive screw from the optical pickup.

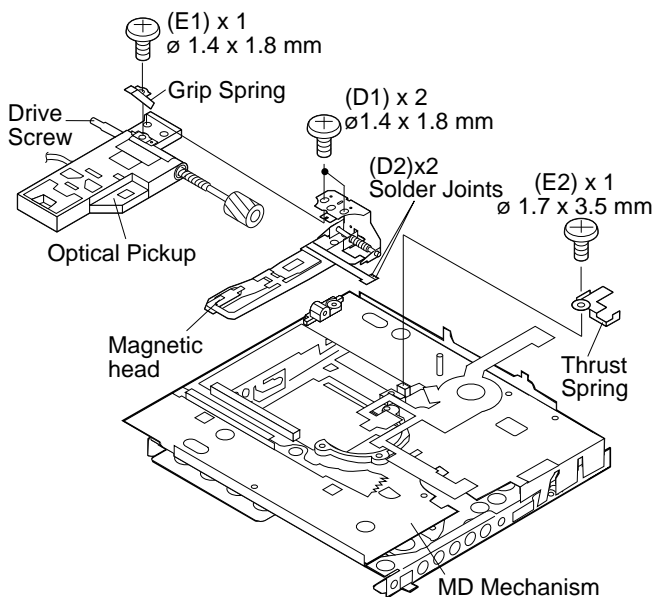


Figure 11-4

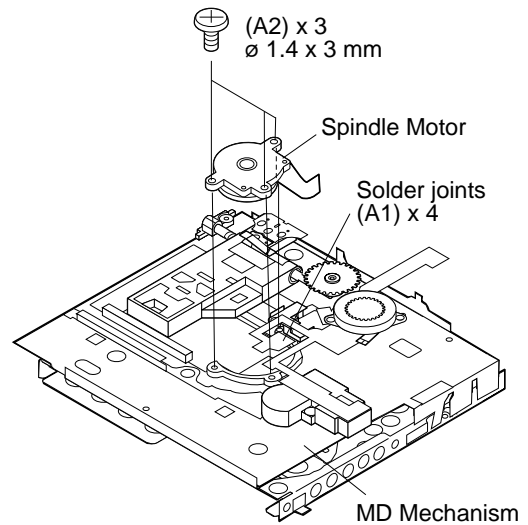


Figure 11-1

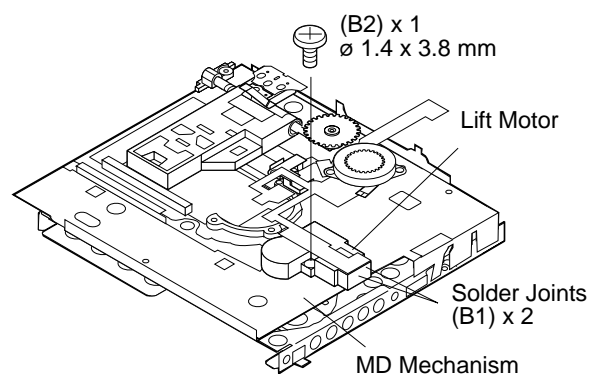


Figure 11-2

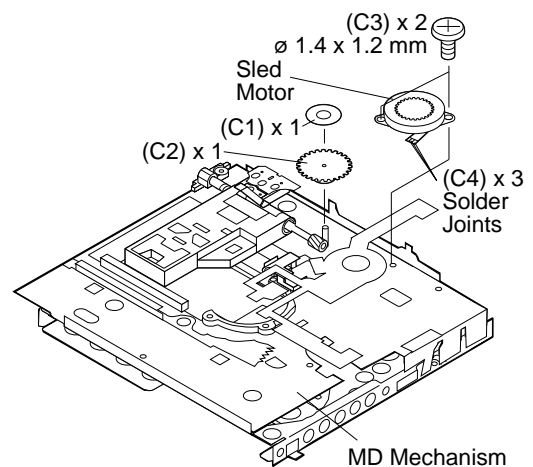


Figure 11-3

ADJUSTMENT

● Test disc

MD adjustment needs two types of disc, namely recording disc (low reflection disc) and playback-only disc (high reflection disc).

| | Type | Test disc | Parts No. |
|---|----------------------|----------------------------|---------------|
| 1 | High reflection disc | MMD-110 (TEAC Test MD) | 88GMMD-110 |
| 2 | Low reflection disc | MMD-213A (TEAC Test MD) | 88GMMD-213A |
| 3 | Low reflection disc | Recording minidisc disc | UDSKM0001AFZZ |

Note: Use the low reflection disc on which music has been recorded.

● Entering the TEST mode

1. Setting at port (in standby state, disc-free state or power nonconnected state)

- (1) Set the port as follows.
TEST1 : "Low"
TEST0 : "High"
- (2) Press the PLAY button in the standby state (it is allowed to close the disc lid or to connect the power supply).
- (3) Test Mode STOP [T E S T _]

2. Setting by special button operation (in standby state)

Test mode: Perform it with the remote control.

- (1) Press and hold the "PLAY MODE" button on the remote control and press the "PLAY" button.
- (2) Release only the "PLAY MODE" button.
- (3) Press and hold only the "PLAY" button and press the "VOLUME-" button.
- (4) Normal mode setting initialization (BASS setting, VOLUME setting, etc.)
- (5) Test Mode STOP [T E S T _]
- (6) Press "VOLUME+" to check the microcomputer version.
- (7) Press "VOLUME-" to light up all the LCDs.

● Leaving the TEST mode

- (1) Press the STOP button in the TEST mode stop state or version indicating state or whole LCD lighting state.
- (2) EEPROM rewrite-enable area updating.
- (3) Change to standby state

● Shipping setting method

- (1) Insert the rechargeable battery. Do not close the compartment.
- (2) Close the battery lid twice in succession while pressing the VOLUME- button and the PLAY button on the main unit at the same time. (Turn on and off the power twice)
- (3) Make sure the display changes from [INIT] to [BYE OK].

● Test Mode

| | |
|-------------------|---|
| 1. AUTO 1 Mode | <ul style="list-style-type: none"> • Perform preliminary automatic adjustment. • If the combination of mechanism and pickup PWB has been changed, be sure to start from AUTO1. |
| 2. AUTO 2 Mode | <ul style="list-style-type: none"> • Perform ATT (attenuator) automatic adjustment. • Perform continuous playback (error rate display, jump test) |
| 3. TEST-PLAY Mode | <ul style="list-style-type: none"> • Continuous playback from the specified address is performed. • 1 line, 10 lines or 100 steps manual jump is performed. • C1 error rate display (pit section), ADIP error rate display (groove section) • The temperature correction is performed only when servo start is performed, but the posture correction is not performed during continuous playback. |
| 4. TEST-REC Mode | <ul style="list-style-type: none"> • Continuous record from the specified address is performed. • Change of record laser output (servo gain is also changed according to laser output). • The temperature correction is performed only when servo start is performed, but the posture correction is not performed during continuous recording. |
| 5. MANUAL 1 Mode | <ul style="list-style-type: none"> • Temperature is displayed. • Seeing the displayed adjustment value, perform preliminary manual adjustment. (Error rate indication, jump test) |

| | |
|---------------------------|--|
| 6. MANUAL 2 Mode | <ul style="list-style-type: none"> • Temperature is displayed. • Seeing the displayed adjustment value, perform ATT (attenuator) manual adjustment. • Continuous playback is performed (error rate display, jump test). |
| 7. ERROR INFORMATION Mode | <ul style="list-style-type: none"> • Error information is displayed. • Error information is initialized |
| 8. NORMAL Mode | <ul style="list-style-type: none"> • The mode is changed from the TEST mode to the normal mode without adjustment. • In the normal mode the internal operation mode, memory capacity, etc. are indicated. • In the normal mode both temperature correction and posture correction are performed. |
| 9. EEPROM Mode | <ul style="list-style-type: none"> • Factors of digital servo are changed manually. • Cut-off frequency of BASS1, BASS2 and BASS3 is selected manually. • Temperature detection terminal voltage is measured, and the reference value is set. • Defaults are selected and set. • Setting of EEPROM protect area is updated. |

● Operation in each TEST mode

1. AUTO1 Mode

- When the STOP button is pressed while the AUTO1 menu appears or during automatic adjustment, the mode changes to the TEST mode stop state. At this time the adjustment value is not output.
- Be sure to adjust, using the specified disc MMD-213A.
- Adjustment NG; Adjustment item out of range, focus ON failure, and adjustment error
- When the PLAY button is pressed while ADJ. OK is displayed, AUTO2 is executed.

2. AUTO2 Mode

- When the STOP button is pressed while the AUTO2 menu appears or during automatic adjustment, the mode changes to the TEST mode stop state. At this time the adjustment value is not output.
- Adjustment NG; Adjustment item out of range, and adjustment error.
- When the PLAY button is pressed while ADJ. OK is displayed, TEST_PLAY is executed.

3. MANUAL1 Mode

- Adjustment item to be made in AUTO1 mode is performed manually.
- When the VOLUME+ button is pressed during adjustment, the setting increases, and the new setting is output.
- When the VOLUME- button is pressed during adjustment, the setting decreases and the new setting is output.
- If the VOLUME+/- button is held down, the setting changes continuously with 100 ms cycle.
*In this operation, the setting change is performed for each digit. The digit is changed by pressing the MODE button.
- If the setting is within the allowable range, the RANDOM display lights.
- When the STOP button is pressed during MANUAL1 menu or measurement or adjustment, the state is changed to the TEST mode stop state.

4. MANUAL2 Mode

- Adjustment item to be made in AUTO2 mode is performed manually.
- When the VOLUME+ button is pressed during adjustment, the setting increases, and the new setting is output.
- When the VOLUME- button is pressed during adjustment, the setting decreases and the new setting is output.
- If the VOLUME+/- button is held down, the setting changes continuously with 100 ms cycle.
*In this operation, the setting change is performed for each digit. The digit is changed by pressing the MODE button.
- If the setting is within the allowable range, the RANDOM display lights.
- When the STOP button is pressed during MANUAL2 menu or measurement or adjustment, the state is changed to the TEST mode stop state.
- When the PLAY button is pressed in B-ATT set state, the mode is changed to the continuous playback mode.
- As for operation during continuous playback refer to "TEST-PLAY mode explanation".

5. TEST-PLAY Mode

- When the STOP button is pressed while the TEST-PLAY menu appears, or in TEST-PLAY or continuous playback mode, the mode changes to the TEST mode stop state.
- When the PLAY button is pressed while the TEST-PLAY menu appears, continuous playback is initiated from the current pickup position.
- Whenever the DISP button is pressed in the TEST-PLAY menu, the target address changes as follows.
0032 — 03C0 — 0700 — 08A0 — 0950— 0032 —
When the PLAY button is pressed while a target address is displayed, continuous playback is performed after searching that address.
- Each time the MODE button is pressed while the TEST-PLAY mode target address is displayed, the digit which is changed by pressing the FAST FORWARD/REVERSE button is changed as follows.
0032 — 0032 — 0032 — 0032 —
- When the FAST FORWARD button is pressed in the TEST-PLAY mode target address is displayed, the digit of address specified by the MODE button is set to +1h. (0 to F)
- When the FAST REVERSE button is pressed in the TEST-PLAY mode target address is displayed, the digit of address specified by the MODE button is set to -1h. (0 to F)
* When the FAST FORWARD/REVERSE button is held down, the setting changes continuously, one cycle being 100 ms.
- When the BASS button is pressed in the continuous playback mode, the number of jump lines changes as follows.
1 — 10 — 100 step — 1
* After the number of jump lines is indicated for one second, the address indication is restored. [▲▲▲ T R] or [100 stp]
- When the FAST FORWARD button is pressed in the continuous playback mode, the specified number of lines is jumped in the FWD direction.
- When the FAST REVERSE button is pressed in the continuous playback mode, the specified number of lines is jumped in the REV direction.
* When the FAST FORWARD/REVERSE button is held down, jump is repeated every approx. 100 ms.
- Whenever the DISP button is pressed in the continuous playback mode, the indication changes as follows.

| | |
|---|---------------|
| * Pre-mastered disc | |
| Continuous playback (SUBQ address indication) | [S Q □□□□] |
| | |
| Continuous playback (C1 error indication) | [C E ☆☆☆☆] |
| | |
| Continuous playback (SUBQ address indication) | [S Q □□□□] |
| * Recordabl disk | |
| Continuous playback (ADIP address indication) | [A P □□□□] |
| | |
| Continuous playback (C1 error indication) | [C E ☆☆☆☆] |
| | |
| Continuous playback (ADIP error indication) | [A E ★★★★★] |
| | |
| Continuous playback (ADIP address indication) | [A P □□□□] |

MD-MT877/MD-MT877C

6. TEST-REC Mode

- When the STOP button is pressed while the TEST-REC menu appears, or in the TEST-REC mode or continuous record mode, the mode changes to the TEST mode stop state.
- Whenever the DISP button is pressed in the TEST-REC menu, the target address changes as follows.
0032 — 03C0 — 0700 — 08A0 — 0950 — 0032 —
When the PLAY button is pressed while a target address is displayed, continuous playback is performed after searching that address.
- Whenever the MODE button is pressed in the TEST-REC mode target address is displayed, the digit which is changed by the FAST FORWARD/REVERSE button changes as follows.
0032 — 0032 — 0032 — 0032 —
- When the FAST FORWARD button is pressed in the TEST-REC mode target address is displayed, the digit of address specified by the MODE button is set to +1h.(0 to F)
- When the FAST REVERSE button is pressed in the TEST-REC mode target address is displayed, the digit of address specified by the MODE button is set to -1h. (0 to F)
* When the FAST FORWARD/REVERSE button is held down, the setting changes continuously, one cycle being 100 ms.
- When the VOLUME+/- button is pressed in the TEST-REC mode or continuous record mode, the laser record power changes. (Servo gain changes also according to record power.)
* After the laser record power is indicated for one second, the address indication is restored. [R P W _ ▽ ▽]
- □□□□ : Address
- ▽ ▽ : Laser power cord
- Operation is disabled if the premastered disc or disc is in miserase-protected state.

● Explanation of error history code

- 13h : Adjustment servo retraction excessive retrieval
- 16h : C. IN detection time-over
- 17h : A, B, E, F, and TCRSO offset measurement value out of tolerable range
- 21h : Focus retraction completion allowable time-over
- 23h : Track search completion allowable time-over
- 32h : P-TOC read failure
- 42h : U-TOC read failure
- 44h : U-TOC write data write disabled/read check error
- 45h : U-TOC write test failure
- 52h : SD write data write disabled
- 72h : EEPROM data read check sum error
- 73h : Record head drive disabled (by EJECT lever)
- 91h : Ambient temperature is higher than the allowable temperature

7. NORMAL Mode

- When the STOP button is pressed while the NORMAL menu appears, the mode changes to the TEST mode stop state.
- Indication during operation
Indication of memory capacity on main unit LCD
[□ □ _ * * * * _ * *] + Level meter
□ □ : Internal mode
* * * * : Address (Cluster section)
* * : Address (Sector section)
- Selection of sound volume, BASS, etc. is possible (without indication)
- Recording is also possible.
- If the STOP button is pressed during operation in the NORMAL mode, the NORMAL mode is cancelled, and the power is turned off.

8. Error data display Mode

- Reversing when FAST REVERSE button is pressed
- When the STOP button is pressed while the error data indication menu appears or during error data indication, the mode changes to the TEST mode stop state.
- Error data 0 is the latest error.
- Error which occurred in the TEST mode is also stored in the memory.
- When the DISP button is pressed while the error data indication menu appears, the error data is initialized. [C L E A R _]
- ◇ ◇ : Error Code

● Error messages

Can't READ *

The details '* *'

- 'f': Focus
- 'a': Servo adjustment
- 's': Track such
- 'r': TOC information reading
- 'u': UTOC information reading
- 'w': At the time of data writing
- 'p': Spindle start

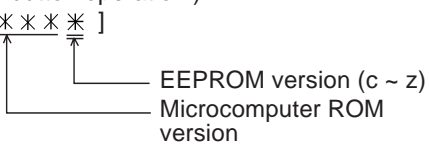
Er-MD **

The details '* * *'

- '41': UTOC light test error
- '80': EEPROM information reading error

EEPROM (IC402) writing procedure

1. Procedure to replace EEPROM and write initial value of microcomputer in EEPROM

- (1) Replace EEPROM.
- (2) Refer to the latest EEPROM data list.
- (3) Start the test mode. (Refer to page 12 "Entering the TEST mode".)
- (4) Version display (At the time of settlement of the test mode by the button operation.)
[V e r . * * * * *]

- (5) The whole LCD lights.
- (6) Test mode stop state.
[T E S T]

- (7) Press the "BASS" button, and press 1 time the "FAST REVERSE" button.
[E E P R O M]
- (8) Perform the operation to display "EEPROM SETTING MODE CHART", compare the EEPROM DATA LIST with the display, and set according to the EEPROM DATA LIST with the VOLUME+ or VOLUME- button.
- (9) Set the temperature reference. (Refer to the Temperature reference setting method.)
- (10) Set according to the EEPROM DATA LIST.
- (11) Press the STOP button.
[T E S T]
- (12) Press the STOP button.
- (13) After data is written in EEPROM, turn off power .

2. Temperature reference setting method

[1] Measurement, calculation and setting procedure

- (1) Set the TEST mode.
- (2) Start the EEPROM mode 'Temp' menu.
 - Button operation in order of BASS, FAST REVERSE x 1 time, PLAY, PLAY in the test mode STOP state.
 - 'TM\$\$%%' is displayed. (\$\$= Temperature code, %% = Temperature reference)
- (3) Once press FAST FORWARD, and determine the displayed microcomputer TEMP input AD value.
 - 'TPin##' is displayed. (## = TEMP input AD value)

- (4) At the ambient temperature, determine the temperature corrected value from the temperature measurement value correction table.
- (5) Determine the temperature reference, using the following formula.
 - Temperature reference = Microcomputer TEMP input AD value + Temperature corrected value.
- (6) Set the temperature reference value by button operation, and check whether the temperature code indication corresponds to "Temperature Code Identification Table".

[2] Temperature measurement value correction table

| Ambient temperature | Temperature correction | Center temperature |
|---------------------|------------------------|--------------------|
| + 8°C ~ +10°C | - 05h | + 9.1°C |
| +11°C ~ +13°C | - 04h | + 12.0°C |
| +14°C ~ +16°C | - 03h | + 14.9°C |
| +17°C ~ +19°C | - 02h | + 17.8°C |
| +20°C ~ +22°C | - 01h | + 20.7°C |
| +23°C ~ +25°C | ± 00h | + 23.6°C |
| +26°C ~ +28°C | + 01h | + 26.9°C |
| +29°C ~ +30°C | + 02h | + 29.4°C |
| +31°C ~ +33°C | + 03h | + 32.3°C |

[3] Temperature code identification

Check that the temperature code indicated after the servo control corresponds to the temperature limits below

| Ambient temperature | Temperature correction | Center temperature |
|---------------------|------------------------|--------------------|
| - 9°C ~ +10°C | 08h | + 0.5°C |
| + 3°C ~ +21°C | 07h | + 12.0°C |
| +15°C ~ +33°C | 06h | + 23.6°C |
| +26°C ~ +43°C | 05h | + 35.0°C |

MD-MT877/MD-MT877C

● EEPROM DATA LIST (EEPROM version C)

Fucus setting

| Item display | Set values |
|--------------|------------|
| FG1 _○○ | 44H |
| FG2 _○○ | 70H |
| FF0 _○○ | 10H |
| FF1 _○○ | 70H |
| FF2 _○○ | E8H |
| Ff0 _○○ | 10H |
| Ff1 _○○ | 48H |
| Ff2 _○○ | EAH |
| FZH _○○ | EDH |
| FLn _○○ | 09H |
| FLp _○○ | 06H |
| DJG _○○ | 0FH |
| FSS _○○ | 28H |
| FTS _○○ | 18H |
| FSB _○○ | 40H |
| FTB _○○ | 38H |
| FGM _○○ | 66H |
| TVG _○○ | 84H |
| TO1 _○○ | 50H |
| TO5 _○○ | 58H |
| TOR _○○ | 58H |

Tracking setting

| Item display | Set values |
|--------------|------------|
| TG1 _○○ | 14H |
| TG2 _○○ | 2AH |
| TF0 _○○ | 10H |
| TF1 _○○ | 70H |
| TF2 _○○ | E0H |
| Tf0 _○○ | 10H |
| Tf1 _○○ | 40H |
| Tf2 _○○ | E4H |
| TFS _○○ | 00H |
| TBo _○○ | 20H |
| TBt _○○ | 12H |
| TKo _○○ | 20H |
| TKt _○○ | 0DH |
| TDo _○○ | 67H |
| TDt _○○ | 34H |
| SCo _○○ | 00H |
| SCt _○○ | 3AH |
| SCm _○○ | 48H |
| CLp _○○ | 24H |
| CLr _○○ | 30H |
| JPI _○○ | 0EH |
| K10 _○○ | 65H |
| THP _○○ | 02H |
| THG _○○ | 02H |
| TOP _○○ | 00H |
| TOG _○○ | F4H |
| T1P _○○ | 20H |

Spindle setting

| Item display | Set values |
|--------------|------------|
| SPG _○○ | 30H |
| SPi _○○ | 9AH |
| SPm _○○ | 62H |
| SPo _○○ | 4FH |
| PGM _○○ | E0H |
| SP1 _○○ | 10H |
| SP2 _○○ | 60H |
| SP3 _○○ | F2H |
| SP4 _○○ | F2H |
| SP5 _○○ | 10H |
| Sp2 _○○ | 60H |
| Sp5 _○○ | 10H |
| SD1 _○○ | 7FH |
| SD2 _○○ | 7FH |
| SPK _○○ | EBH |
| MPG _○○ | 28H |
| SPL _○○ | 60H |
| SPW _○○ | 0FH |
| SPB _○○ | 66H |
| SRi _○○ | C0H |
| SRm _○○ | 9AH |
| SRo _○○ | 7BH |

Sled setting

| Item display | Set values |
|--------------|------------|
| SKS _○○ | 7FH |
| SKL _○○ | 7FH |
| SLC _○○ | 24H |
| STL _○○ | 07H |
| STM _○○ | 42H |
| STE _○○ | A6H |
| SDV _○○ | 60H |
| SJP _○○ | 03H |
| WTm _○○ | 18H |
| SRV _○○ | 54H |
| SLT _○○ | 5CH |
| MVS _○○ | 0AH |
| SLS _○○ | 28H |
| SKE _○○ | 0EH |
| SDE _○○ | 1CH |

BASS setting

| Item display | Set values |
|--------------|------------|
| B1A _○○ | 3FH |
| B1B _○○ | 00H |
| B1C _○○ | 00H |
| B2A _○○ | 1FH |
| B2B _○○ | 00H |
| B2C _○○ | 00H |
| B3A _○○ | E2H |
| B3B _○○ | 00H |
| B3C _○○ | 00H |

ADJ.SET setting

| Item display | Set values |
|--------------|------------|
| COK _○○ | 28H |
| FAT _○○ | C0H |
| TAT _○○ | 3EH |
| CAT _○○ | 40H |
| FAB _○○ | ××H |

Digital EQ setting

| Item display | Set values |
|--------------|------------|
| HQ1 _○○ | 90H |
| HQ2 _○○ | 90H |
| HSG _○○ | 11H |
| HSO _○○ | FDH |
| LQ1 _○○ | 90H |
| LQ2 _○○ | 90H |
| LSG _○○ | 11H |
| LSO _○○ | 00H |
| GQ1 _○○ | 98H |
| GQ2 _○○ | 84H |
| GSG _○○ | 11H |
| EQP _○○ | 00H |

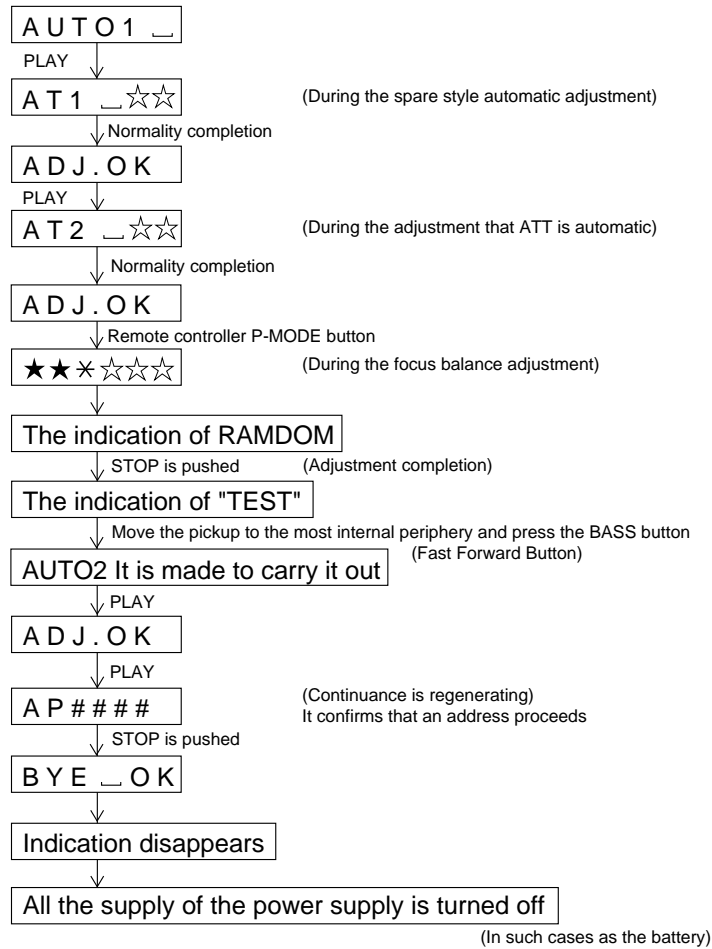
Control setting

| Item display | Set values |
|--------------|------------|
| CT0 _○○ | 02H |
| CT1 _○○ | 01H |
| CT2 _○○ | 30H |
| CT3 _○○ | 20H |
| CT4 _○○ | D0H |
| CT5 _○○ | 4BH |
| CT6 _○○ | 18H |
| RC0 _○○ | C0H |
| RC1 _○○ | FEH |
| SYC _○○ | A6H |
| PWL _○○ | 54H |
| DR1 _○○ | 24H |
| DR2 _○○ | 22H |
| IN1 _○○ | 17H |
| IN2 _○○ | 11H |
| INH _○○ | 00H |
| DRH _○○ | 64H |
| PLE _○○ | A6H |
| RCE _○○ | 94H |
| ELT _○○ | A0H |
| X2T _○○ | C0H |
| SDF _○○ | 1FH |
| CHV _○○ | 50H |
| DRS _○○ | 5AH |
| DUP _○○ | 00H |
| RFL _○○ | D0H |
| CG1 _○○ | 66H |
| FB0 _○○ | FCH |
| RST _○○ | 00H |
| R20 _○○ | 80H |
| R21 _○○ | 20H |
| R40 _○○ | BFH |
| R41 _○○ | 02H |
| FBL _○○ | 16H |
| MC2 _○○ | 00H |
| MC4 _○○ | 00H |
| L2H _○○ | 81H |
| L4H _○○ | 80H |
| SPM _○○ | 00H |
| MSL _○○ | 80H |
| US0 _○○ | 00H |
| US1 _○○ | 00H |
| US2 _○○ | 00H |

MD-MT877/MD-MT877C

Do the following when replacing the mechanism, the pickup, the EEPROM (IC402), the LSI(IC201) or the main PWB unit.

Enter the test mode, move the pickup to the most internal periphery and execute AUTO1.
(Use the disc of MMD-213A.)



If you replaced EEPROM, set the EEPROM volume to the final version.

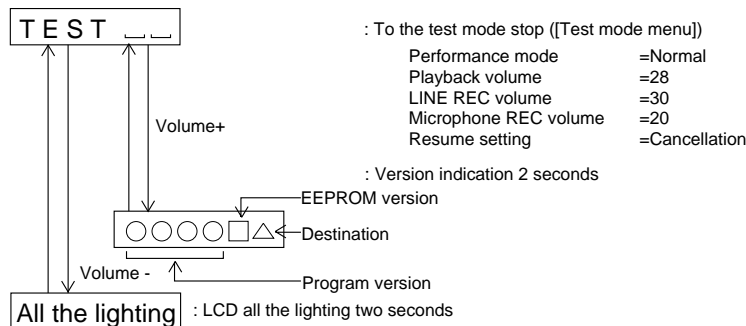
Test Mode Start · Completion method

• Starting method of the test mode

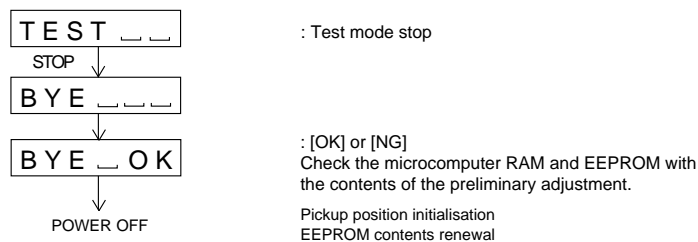
When the unit is in the stand-by state (with no display), the test mode is started by performing the following operation using the remote control.

Press the [PLAY] button while pressing the [PLAY-MODE] button, and release the [PLAY-MODE] button while keeping the [PLAY] button pressed, and press the [VOLUME-] button.

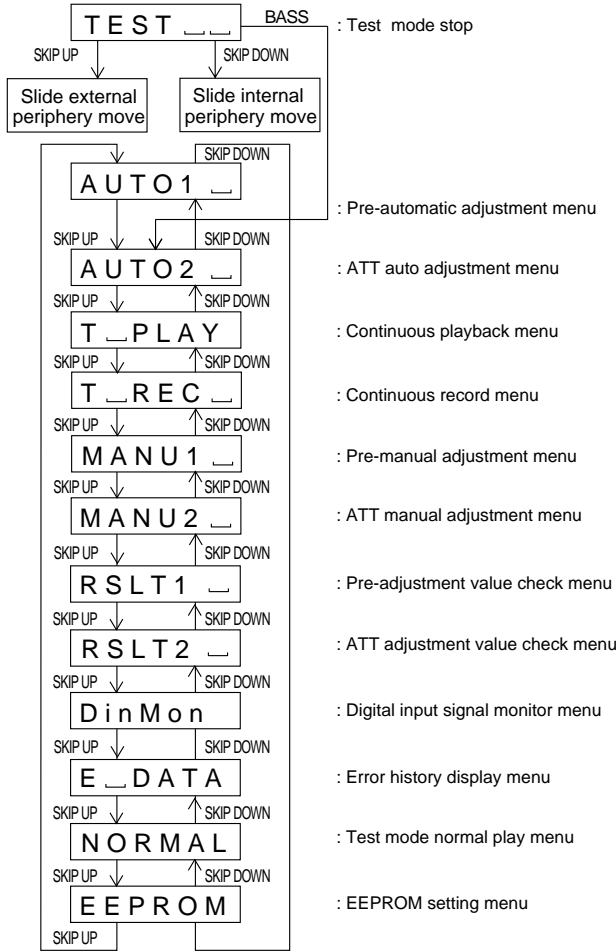
Indication after the start :



• How to cancel the test mode

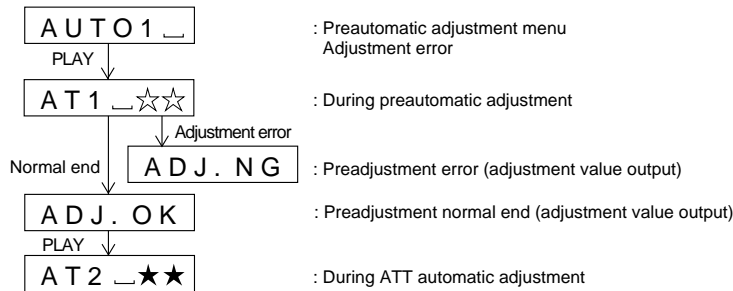


Change of Tset Mode Menus



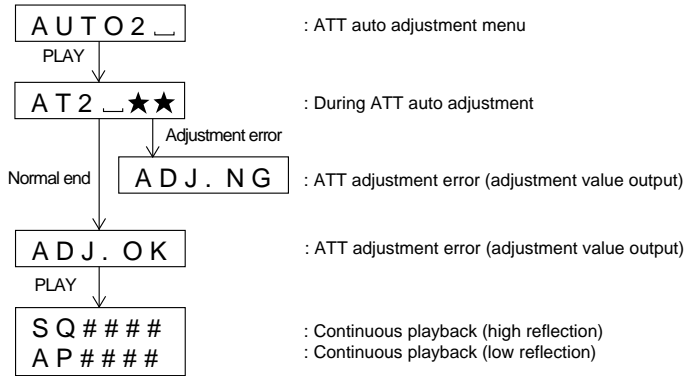
- * When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
- * When the [VOLUME+] button is pressed in the "TEST MODE STOP" state, the program version is displayed for 2 seconds
- * When the [VOLUME-] button is pressed in the "TEST MODE STOP" state, all the displays appear for 2 seconds.

Servo Preautomatic Adjustment



- * When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
- * Move the pickup lens manually to the innermost periphery before performing the servo preliminary auto adjustment. (Refer to "Change of test mode menus" for the operation method.)
- * "☆☆" is the internal processing number, the meanings of the numbers are as follows.
 - 0 0 : Initial setting
 - 0 2 : ABEF input offset measurement
 - 0 4 : AB input (ABMAXO) level setting
 - 0 5 : Focus ATT tentative setting
 - 0 6 : Pit section EF input level setting
 - 0 7 : COUT level setting for pit section adjustment
 - 0 8 : Sled external periphery move
 - 0 9 : Groove section EF input level setting
 - 1 0 : COUT level setting for groove section adjustment
 - 1 1 : TCRS input level setting
 - 1 2 : Tracking ATT initial setting
 - 1 3 : AB input (LPFABO) level setting
 - 1 4 : Focus ATT initial setting
 - 1 6 : TCRS input offset measurement
- * It is necessary for each test mode where servo operation is made to complete the preliminary adjustment. (Otherwise, "ErADJ." appears.)
- * The preliminary adjustment complete state is stored on the EEPROM (protected field).

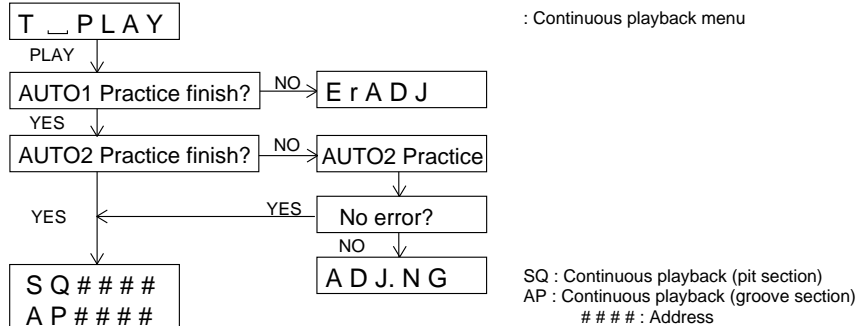
Servo ATT Auto Adjustment



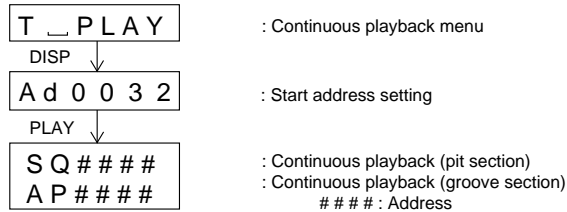
- * When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
- * Move the pickup lens manually to the innermost periphery before performing the servo ATT auto adjustment. (Refer to "Change of test mode menus" for the operation method.)
- * "★★" represent the adjustment number as follows.
 - 0 0 : Initial setting
 - 0 3 : Pit section tracking ATT setting
 - 0 4 : Pit section focus ATT setting
 - 0 6 : Sled external periphery move (low reflection only)
 - 0 7 : TCRS ATT setting (low reflection only)
 - 0 8 : Groove section tracking ATT setting (low reflection only)
 - 0 9 : Groove section focus ATT setting (low reflection only)

Continuous Playback

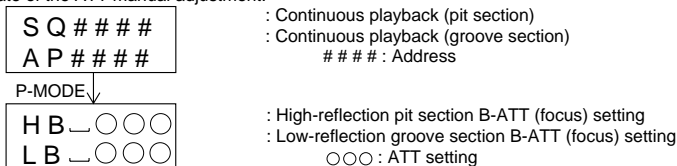
- Continuous playback from current pickup position



- Continuous playback from any address



- * When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
- * In the start address set state the start address changes as follows when the [DISP] button is pressed.
 - 0 0 3 2_H (initial value) → 0 3 C 0_H → 0 7 0 0_H → 0 8 A 0_H
 - 0 9 5 0_H (intermediate value)
- * In the start address setting state the start address change digit changes when the [P-MODE] button is pressed.
 - 1st digit (initial value) → 2nd digit → 3rd digit
 - Ad 0 0 5 0 → Ad 0 0 5 0 → Ad 0 0 5 0
- * In the start address set state the value of selection digit changes in the range of "0h to Fh" when the [FAST FORWARD/REVERSE] button is pressed
- * If the [P-MODE] button is pressed in the continuous playback state, the mode is changed to the B-ATT setting state of the ATT manual adjustment.



* In the continuous playback state the number of jump lines changes as follows shown the [BASS] button is pressed.



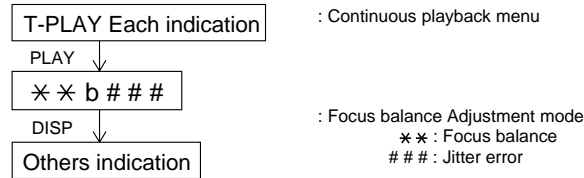
* When the [FAST FORWARD] button is pressed in the continued playback mode, jump of specified number of lines occurs in the external periphery direction.

If the key is held down jump occurs continuously (100 ms cycle).

* When the [FAST REVERSE] button is pressed in the continuous playback mode, jump of specified number of lines occurs in the internal periphery direction.

If the key is held down, jump occurs continuously (100 ms cycle).

• Focus balance Adjustment mode



* The focus balance adjustment mode is available only for low reflection discs.

* The RANDOM marker lights up in the focus balance adjustment mode.

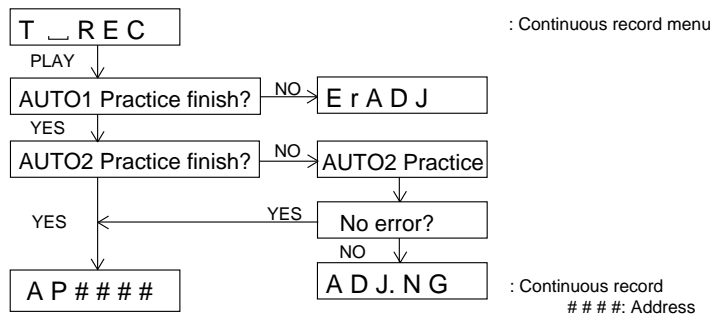
* The focus balance (* *) can be changed by the VOL UP/DOWN button operation.

* If the PLAY button is pressed in the focus balance adjustment mode, the unit returns to the continuous playback mode.

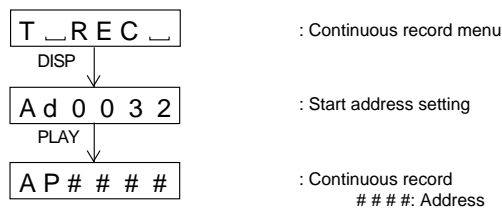
Continuous Record

Enter the EEPROM setting mode, and press the FAST FORWARD button.
Change the MSL setting value from 00 to 08 by using CTRL_ (control setting menu).
(If the MSL remains in 00, no signal is recorded.)

• Continuous record from the current pickup position

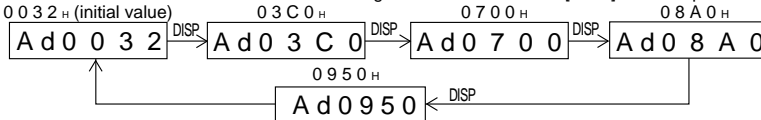


• Continuous record playback from any address

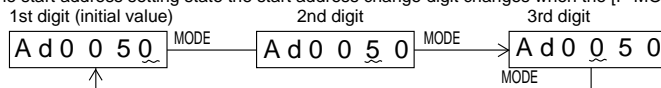


* When the [STOP] button is pressed in specific condition, the "TEST MODE STOP" state is set.

* In the start address set state the start address changes as follows when the [DISP] button is pressed.



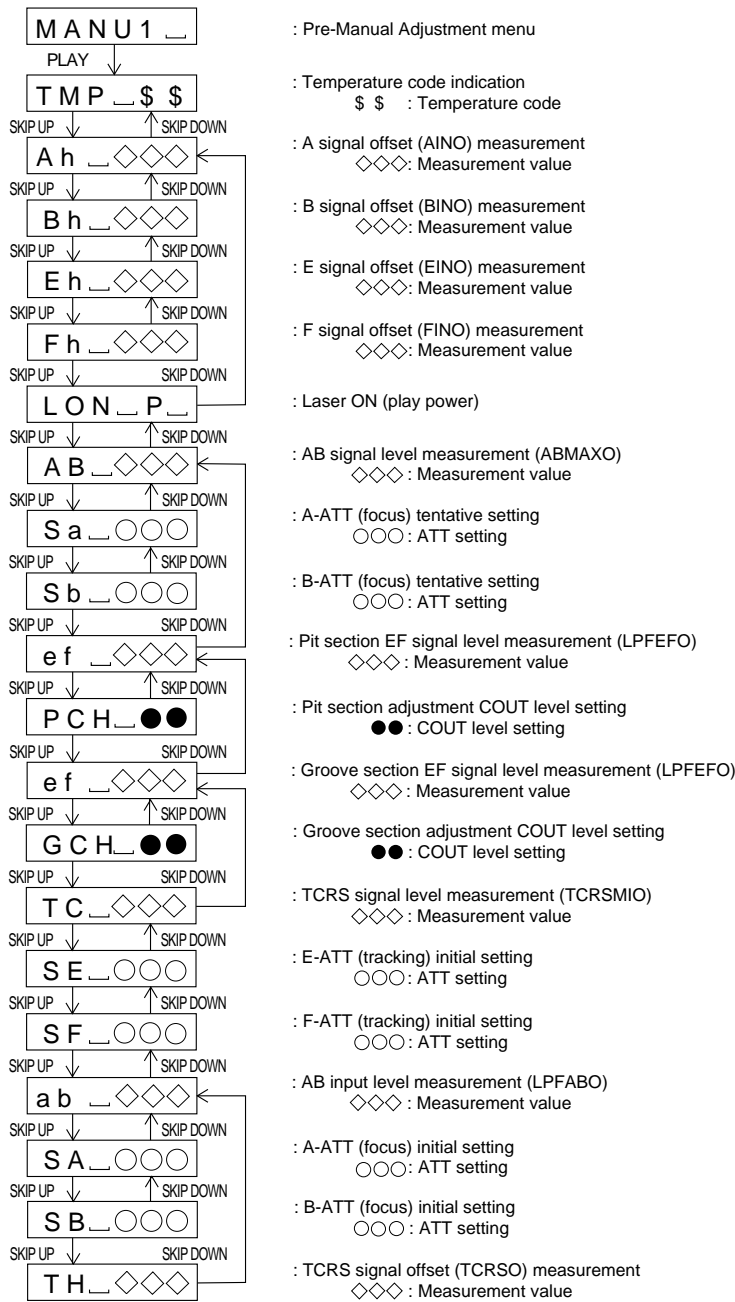
* In the start address setting state the start address change digit changes when the [P-MODE] button is pressed.



* In the start address set state the value of selection digit changes in the range of 0h to Fh when the [FAST FORWARD/REVERSE] button is pressed.

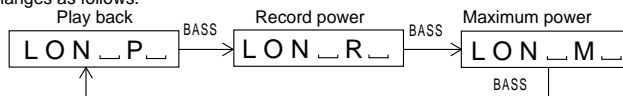
* In the continuous record state and start address set state the record laser power changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed. (Initial value 0DH)

Servo Pre-Manual Adjustment



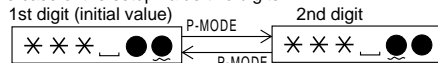
* When the [STOP] button is pressed in specific condition, the "TEST MODE STOP" state is set.

* If the [BASS] button is pressed in the laser ON state (with no disc or the lid open), laser power changes as follows.

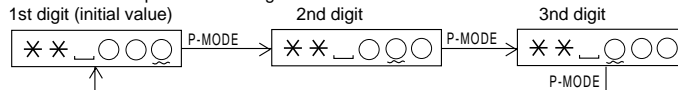


* In the specific setting display state the setting change digit changes when the [P-MODE] button is pressed.

• In the case of the setup value two digits.

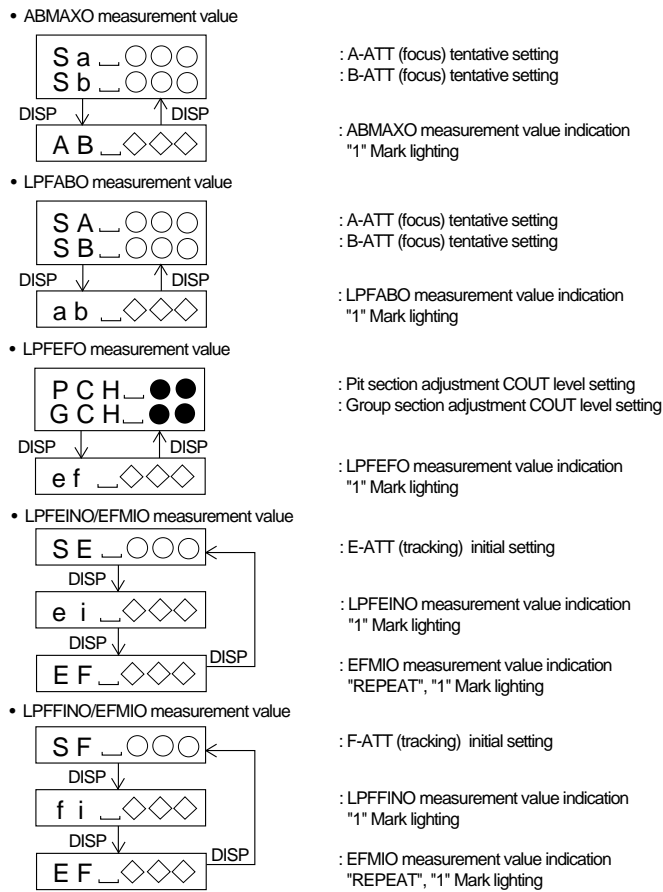


• In the case of the setup value three digits.

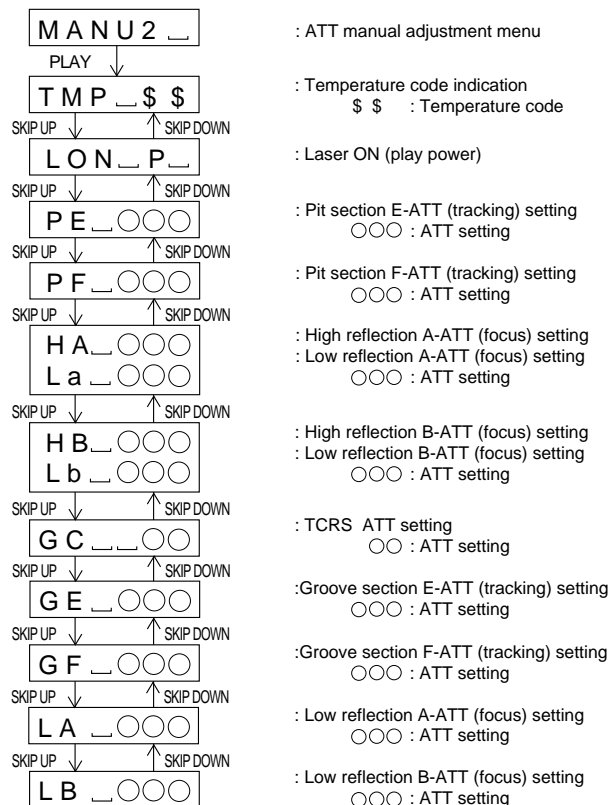


* In the specific state the setting changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed.

* If the [DISP] button is pressed, the display changes as follows.

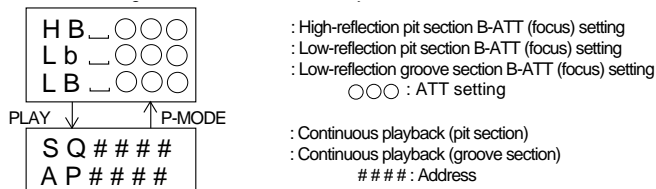


Servo ATT Manual Adjustment

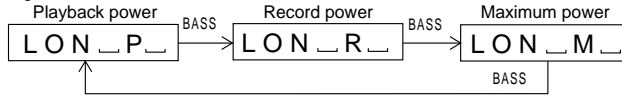


* When the [STOP] button is pressed in specific condition, the "TEST MODE STOP" state is set.
 * If the [PLAY] button is pressed in the B-ATT setting state, the mode is changed to the continuous playback mode.
 And if the [P-MODE] button is pressed in the continuous playback state, the mode is changed to the B-ATT setting state of the ATT manual adjustment.

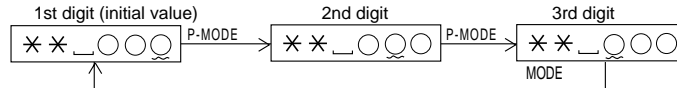
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* If the [BASS] button is pressed in the laser ON state (with no disc or the lid open), laser power changes as follows.



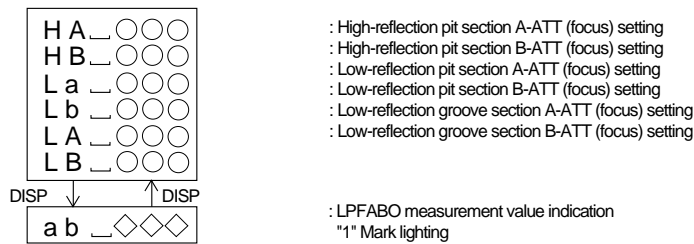
* In the specific setting display state the setting change digit changes when the [P-MODE] button is pressed.



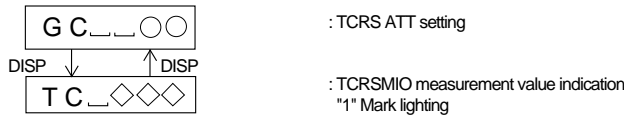
* In the specific state the setting changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed.

* If the [DISP] button is pressed, the display changes as follows.

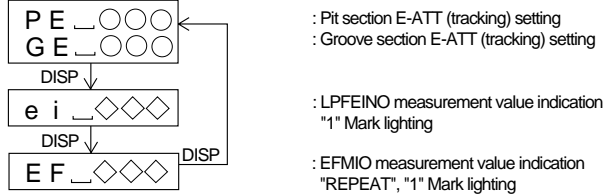
- LPFABO measurement value



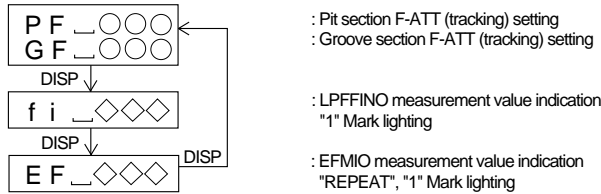
- TCRSMIO measurement value



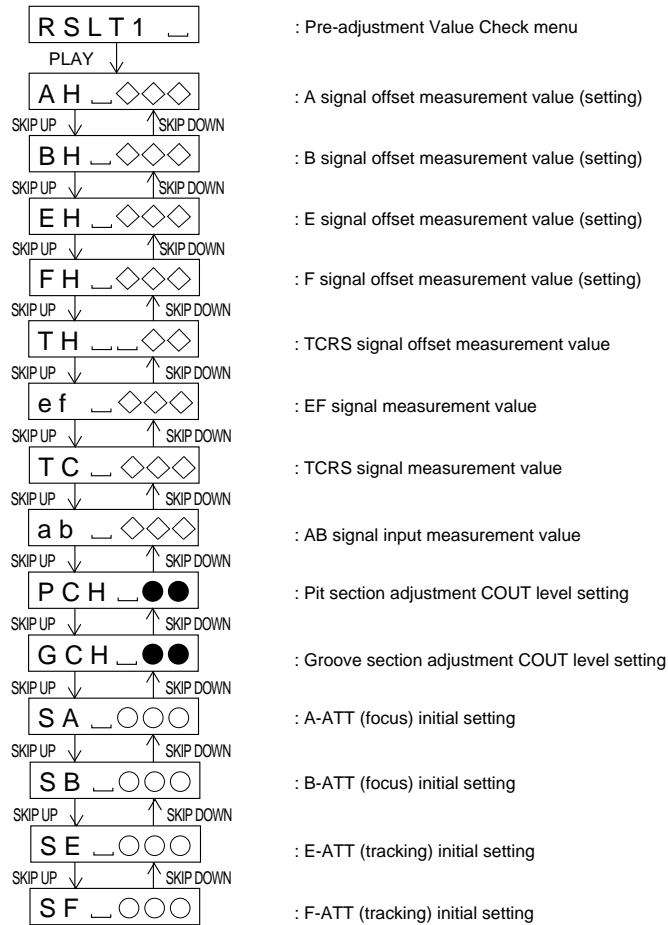
- LPFEINO/EFMIO measurement value



- LPFFINO/EFMIO measurement value



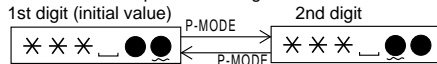
Servo Pre-adjustment Value Check



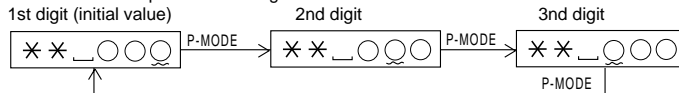
* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.

* In the specific setting display state the setting change digit changes when the [P-MODE] button is pressed.

• In the case of the setup value two digits.



• In the case of the setup value three digits.

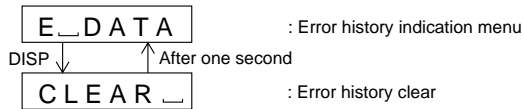


* In the specific state the setting changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed.

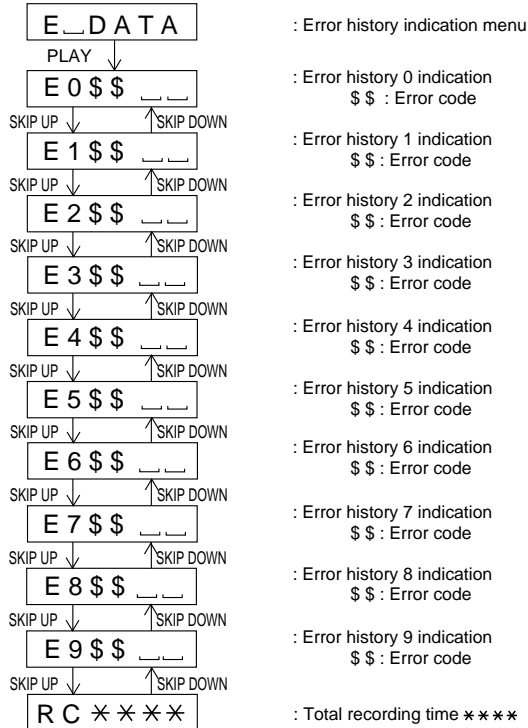
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Error History Display

- Error history clear

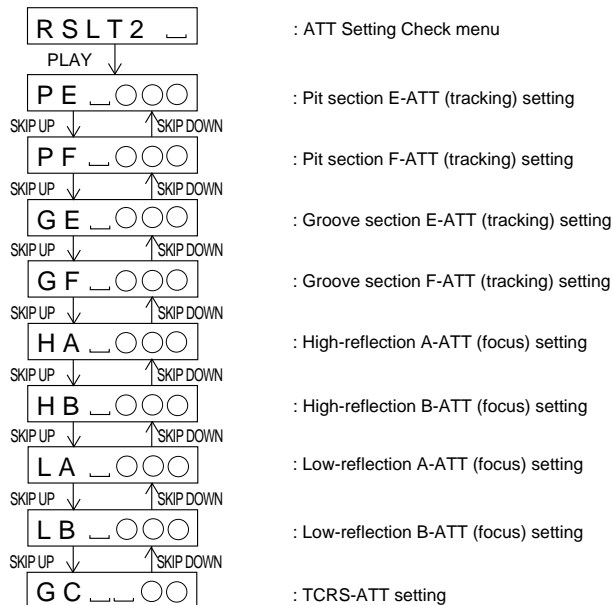


- Error history indication



* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.

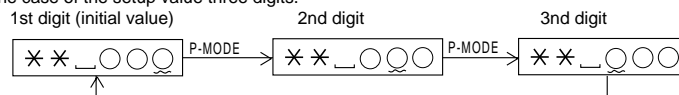
ATT Setting Check



* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.

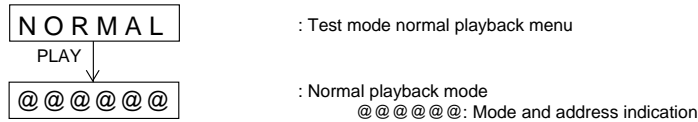
* In the specific setting display state the setting change digit changes when the [P-MODE] button is pressed.

- In the case of the setup value three digits.



* In the specific state the setting changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed.

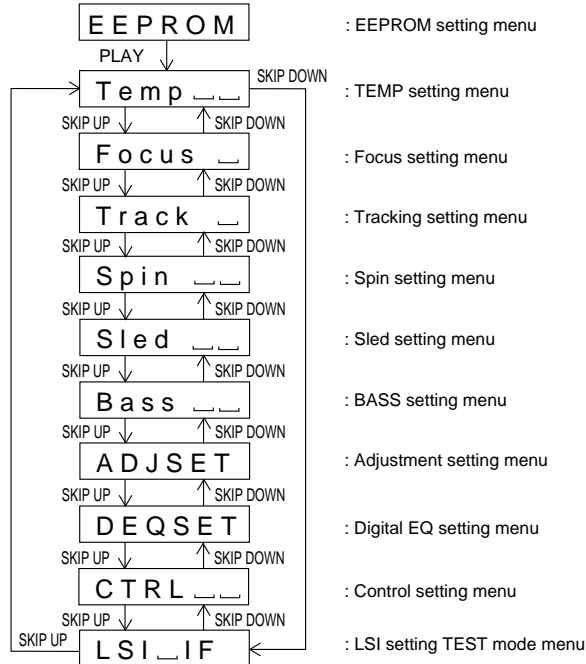
Test Mode Normal Playback



* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.

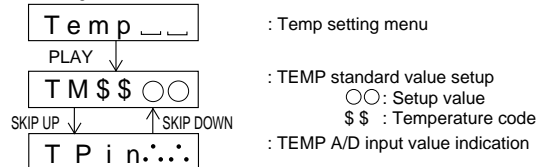
EEPROM Setting

• Menu transition



* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.

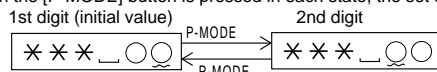
• TEMP Setting



* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.

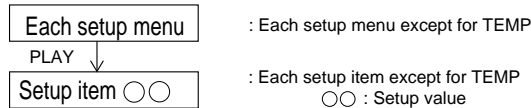
* When the [DISP] button operation is performed in the specific state, the menu changes to "TEMP SETTING menu".

* When the [P-MODE] button is pressed in each state, the set digit is changed.



* In the specific state the setting changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed.

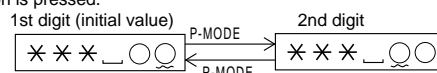
• Setup except for TEMP



* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.

* When the [DISP] button operation is performed in the specific state, the menu changes to "TEMP SETTING menu".

* In the specific setting display state the setting change digit changes when the [P-MODE] button is pressed.



* In the specific state the setting changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed.

NOTES ON SCHEMATIC DIAGRAM

• Resistor:

To differentiate the units of resistors, such symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is ohm-type resistor. Besides, the one with "Fusible" is a fuse type.

• Capacitor:

To indicate the unit of capacitor, a symbol P is used: this symbol P means pico-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression "capacitance/withstand voltage" is used.

(CH), (TH), (RH), (UJ): Temperature compensation

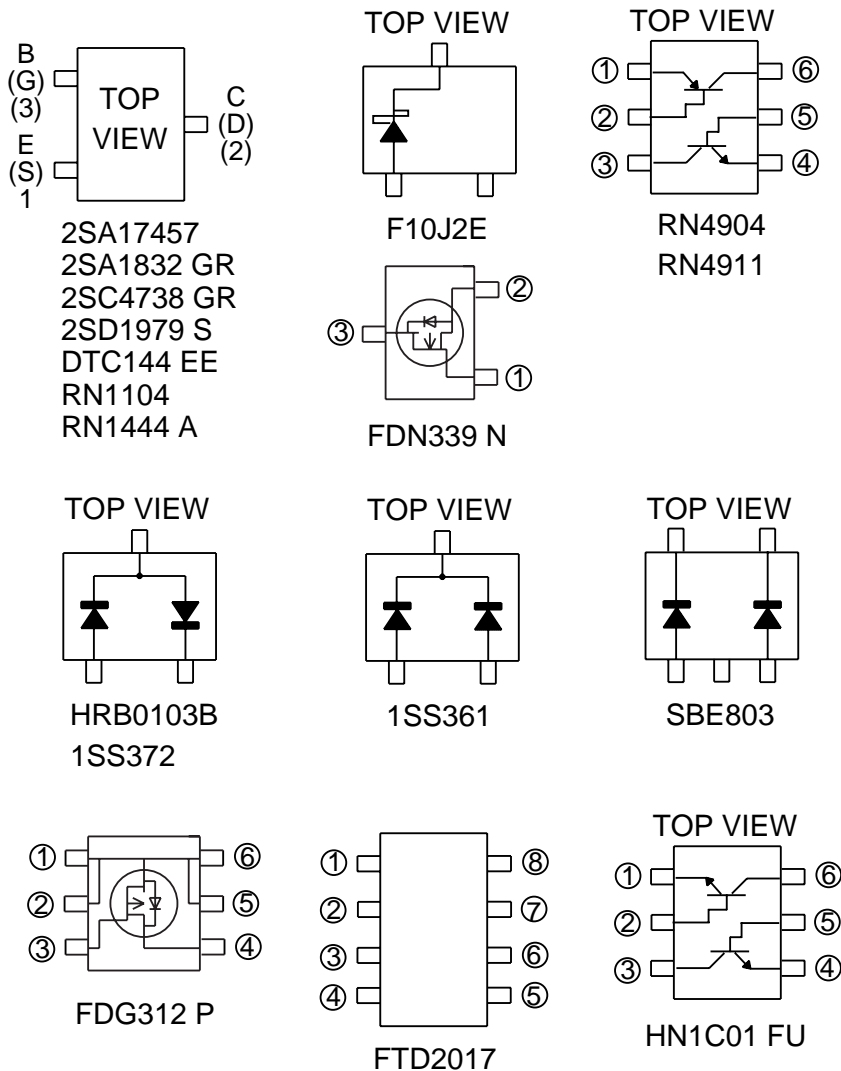
(ML): Mylar type

• The indicated voltage in each section is the one measured by Digital Multimeter between such a section and the chassis with no signal given.

• Parts marked with "⚠" (□ = □ □ □ □) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

| REF. NO | DESCRIPTION | POSITION |
|---------|--------------|----------|
| SW401 | EJECT | OFF—ON |
| SW901 | DISC PROTECT | OFF—ON |
| SWA01 | RECORD | OFF—ON |
| SWA02 | PLAY | OFF—ON |
| SWA03 | BASS | OFF—ON |
| SWA04 | EDIT | OFF—ON |
| SWA05 | DISPLAY | OFF—ON |
| SWA06 | VOLUME - | OFF—ON |
| SWA07 | VOLUME + | OFF—ON |
| SWA08 | STOP | OFF—ON |
| SWA09 | MODE | OFF—ON |
| SWA10 | FAST REVERSE | OFF—ON |
| SWA11 | FAST FORWARD | OFF—ON |
| SWA12 | ENTER | OFF—ON |
| SWA13 | OPEN/CLOSE | OFF—ON |

TYPES OF TRANSISTOR AND DIODE



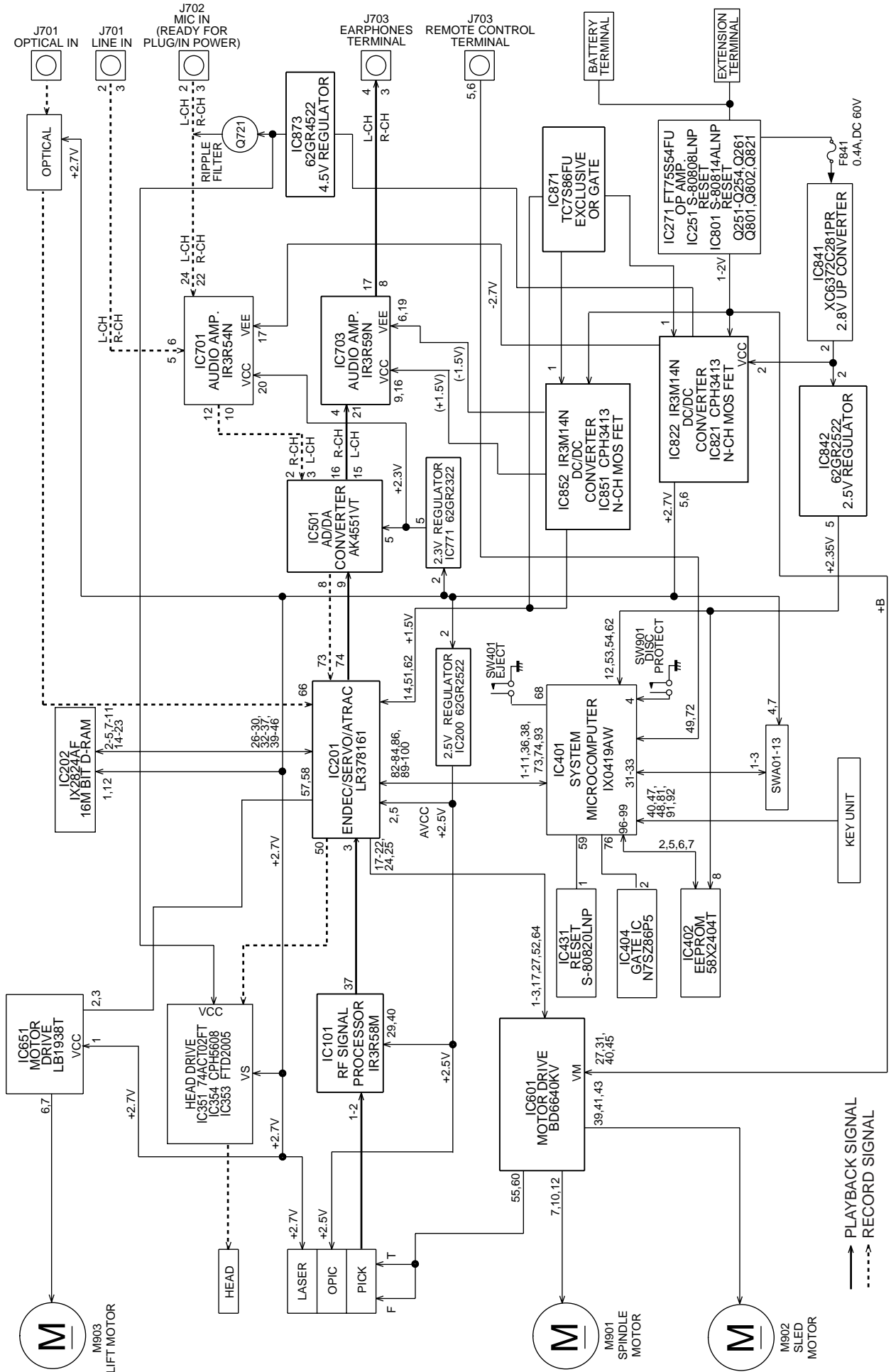
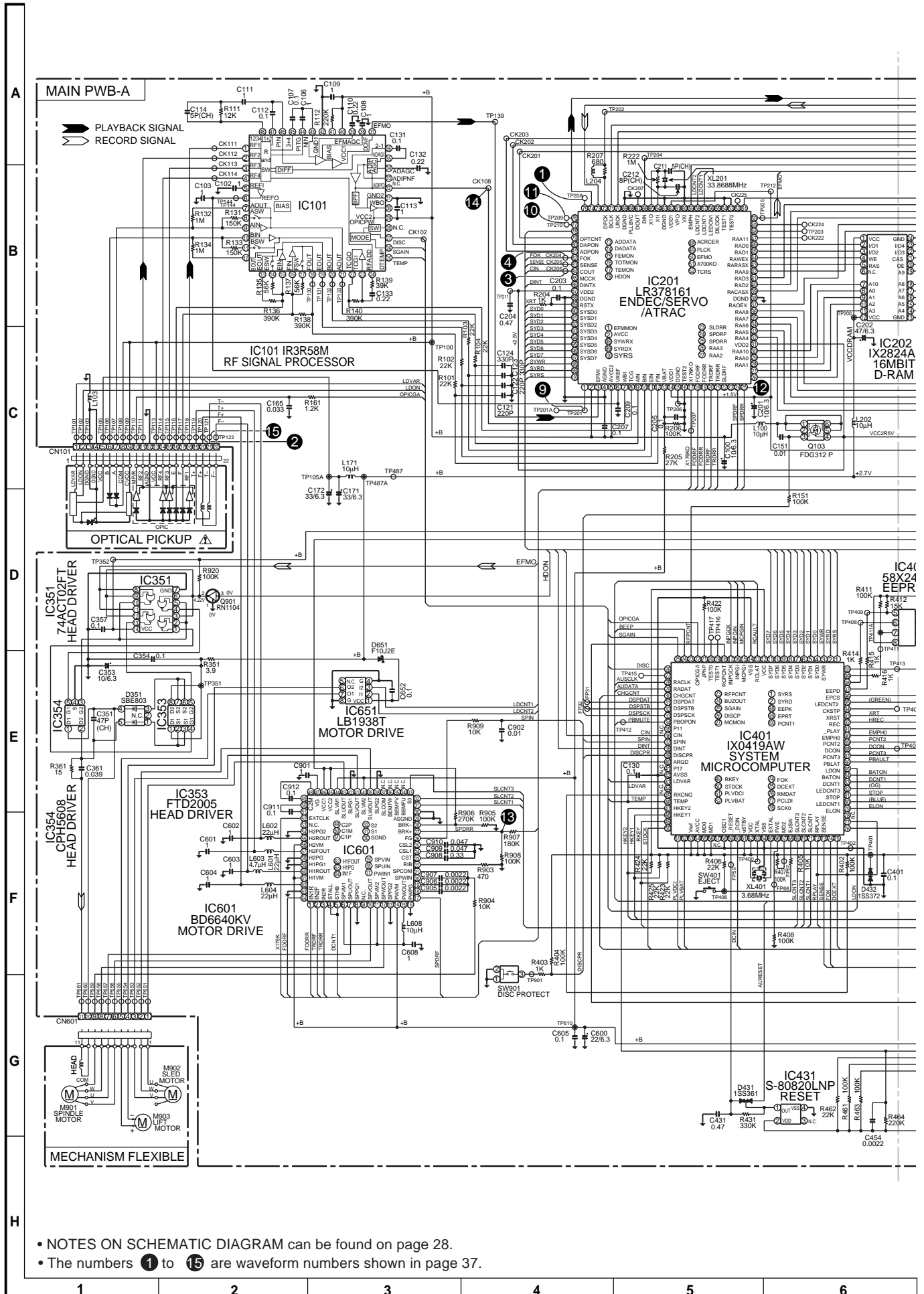


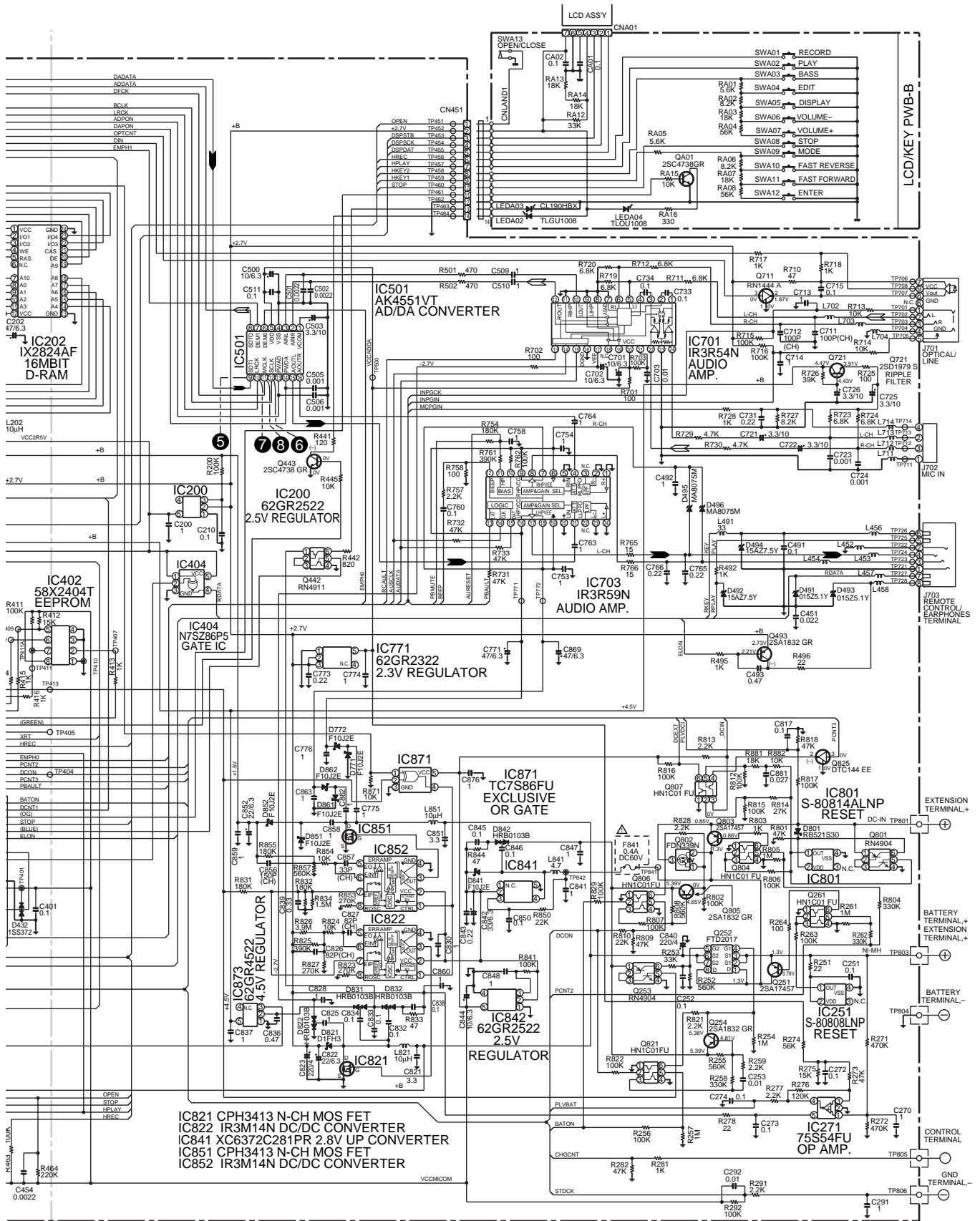
Figure 29 BLOCK DIAGRAM

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- NOTES ON SCHEMATIC DIAGRAM can be found on page 28.
- The numbers ① to ⑬ are waveform numbers shown in page 37.

Figure 30 SCHEMATIC DIAGRAM (1/2)



IC821 CPH3413 N-CH MOS FET
 IC822 IR3M14N DC/DC CONVERTER
 IC841 XC6372C281PR 2.8V UP CONVERTER
 IC851 CPH3413 N-CH MOS FET
 IC852 IR3M14N DC/DC CONVERTER

| | | | | | |
|---|---|---|----|----|----|
| 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|----|----|----|

Figure 31 SCHEMATIC DIAGRAM (2/2)

MAIN PWB-A (TOP VIEW)

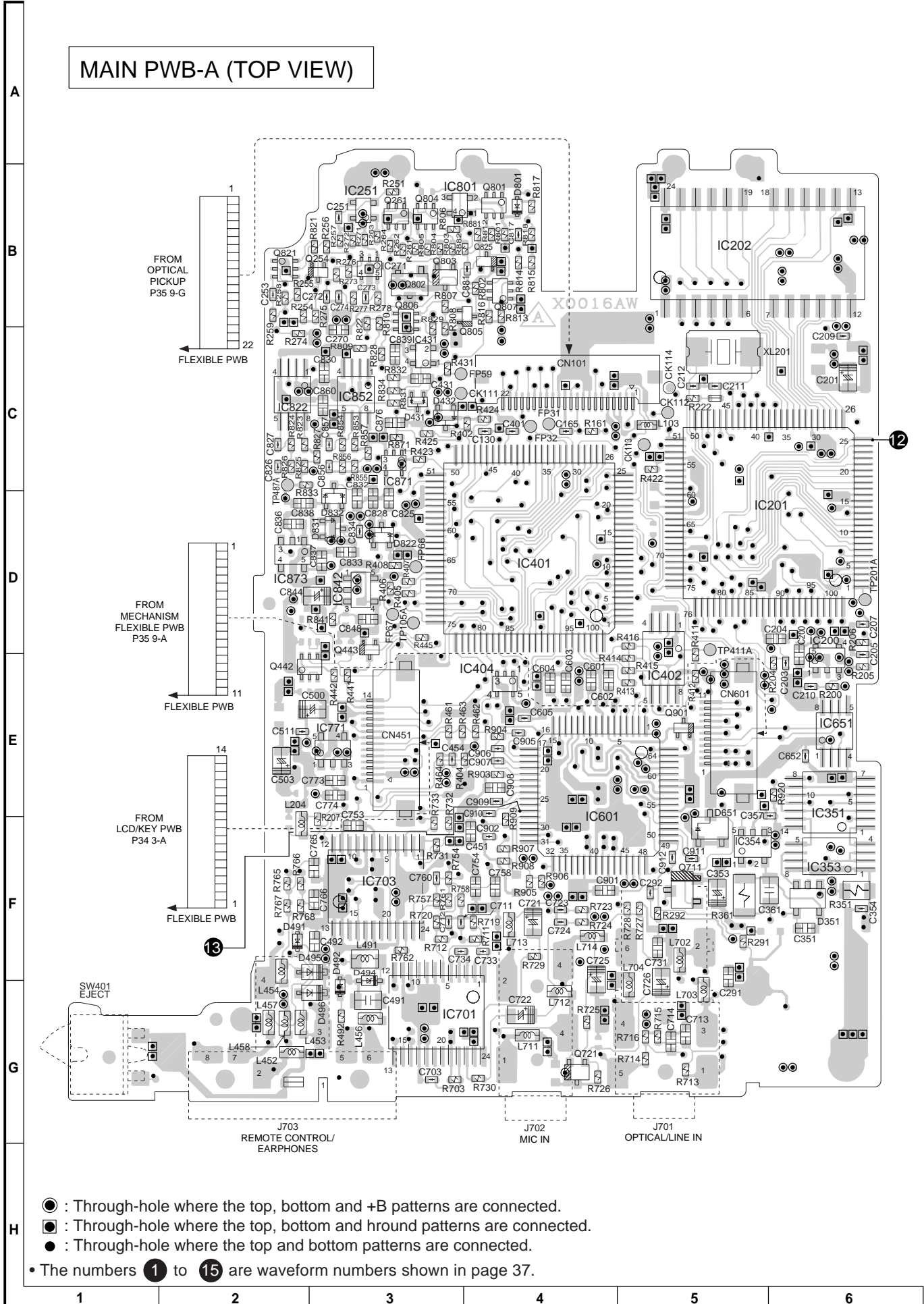
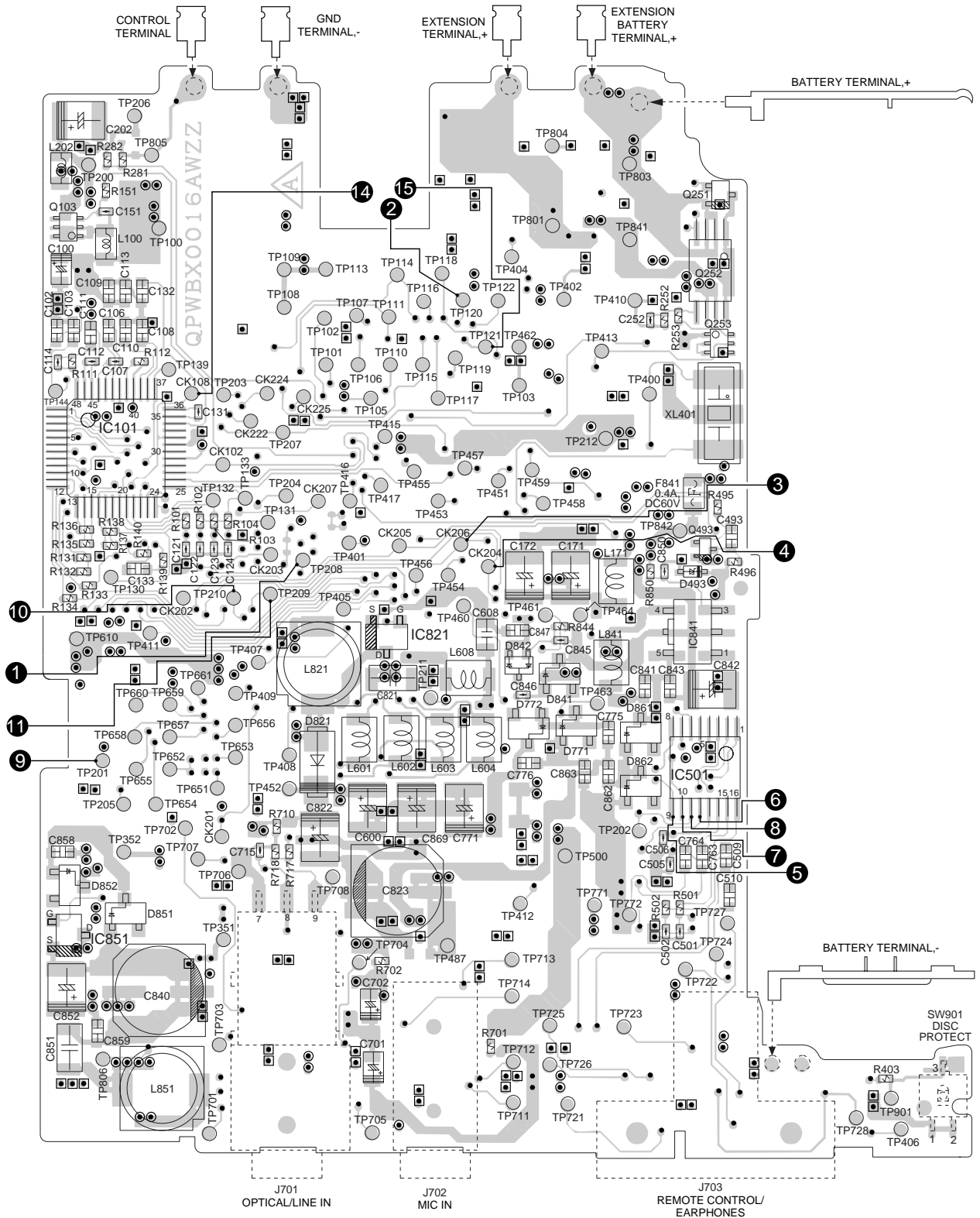


Figure 32 WIRING SIDE OF P.W.BOARD (1/4)

MAIN PWB-A (BOTTOM VIEW)



| | | | | | |
|---|---|---|----|----|----|
| 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|----|----|----|

Figure 33 WIRING SIDE OF P.W.BOARD (2/4)

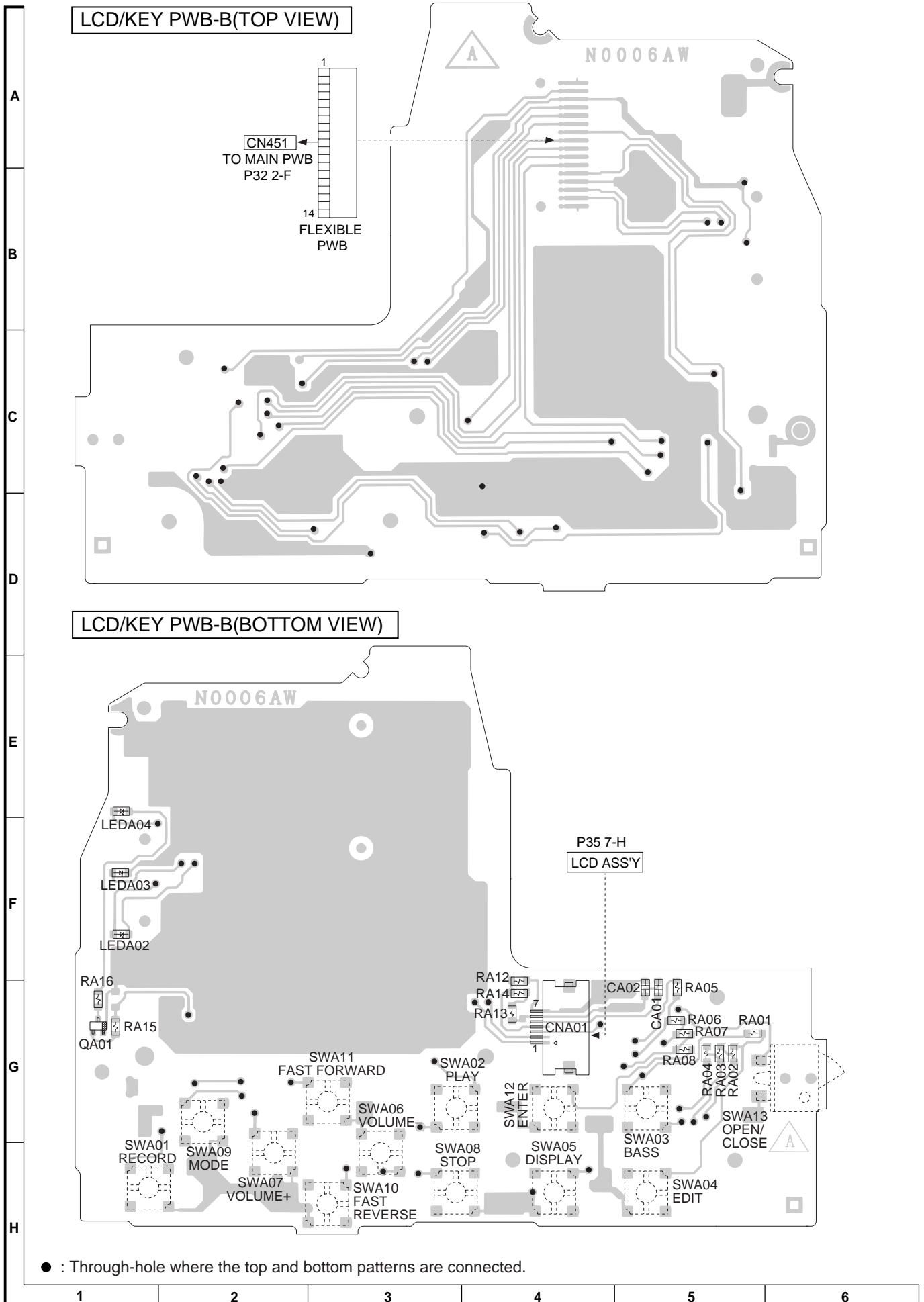


Figure 34 WIRING SIDE OF P.W.BOARD (3/4)

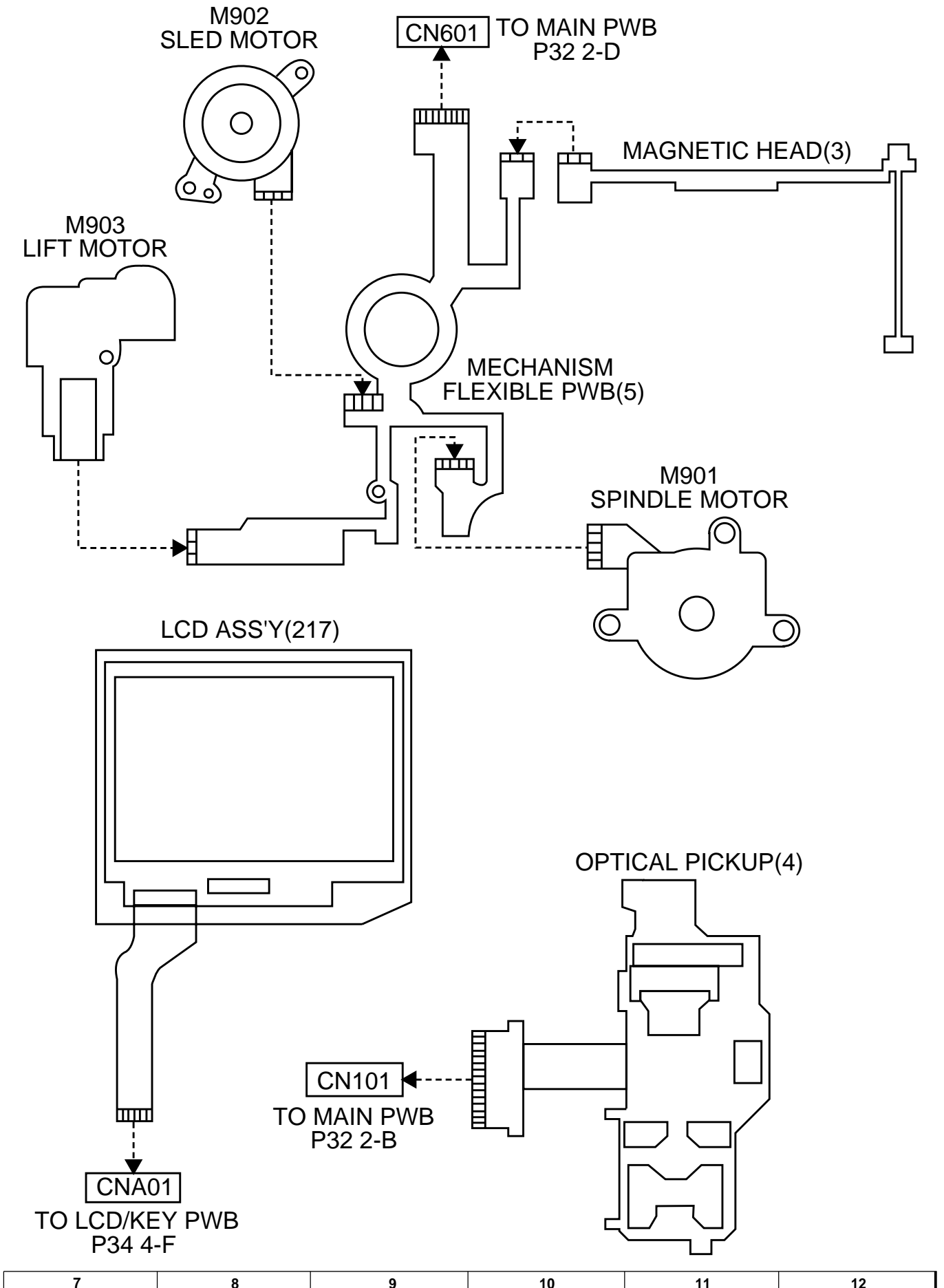


Figure 35 WIRING SIDE OF P.W.BOARD (4/4)

VOLTAGE

| IC101 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 0.26 V |
| 2 | 0.26 V |
| 3 | 0.26 V |
| 4 | 0.26 V |
| 5 | 1.25 V |
| 6 | 1.25 V |
| 7 | 1.25 V |
| 8 | 1.25 V |
| 9 | 1.25 V |
| 10 | 1.25 V |
| 11 | 1.25 V |
| 12 | 1.25 V |
| 13 | 1.25 V |
| 14 | 1.25 V |
| 15 | 1.25 V |
| 16 | 1.25 V |
| 17 | 1.25 V |
| 18 | 1.25 V |
| 19 | 1.25 V |
| 20 | 1.25 V |
| 21 | 1.25 V |
| 22 | 1.25 V |
| 23 | 1.25 V |
| 24 | 0.26 V |
| 25 | 1.48 V |
| 26 | 0 V |
| 27 | 0 V |
| 28 | 2.49 V |
| 29 | 2.49 V |
| 30 | 1.78 V |
| 31 | 0 V |
| 32 | 1.25 V |
| 33 | 1.25 V |
| 34 | 0.26 V |
| 35 | 1.25 V |
| 36 | 1.25 V |
| 37 | 1.3 V |
| 38 | 1.28 V |
| 39 | 0.7 V |
| 40 | 2.49 V |
| 41 | 1.51 V |
| 42 | 0 V |
| 43 | 1.25 V |
| 44 | 0.28 V |
| 45 | 0.28 V |
| 46 | 1.25 V |
| 47 | 0.28 V |
| 48 | 0.28 V |

| IC201 | | | |
|---------|---------|---------|---------|
| PIN NO. | VOLTAGE | PIN NO. | VOLTAGE |
| 1 | 0.79 V | 51 | 1.24 V |
| 2 | 2.49 V | 52 | 0 V |
| 3 | 1.3 V | 53 | 0 V |
| 4 | 0 V | 54 | 0 V |
| 5 | 2.49 V | 55 | 2.5 V |
| 6 | 1.25 V | 56 | 0 V |
| 7 | 1.25 V | 57 | 0 V |
| 8 | 1.25 V | 58 | 0 V |
| 9 | 1.25 V | 59 | 0 V |
| 10 | 1.25 V | 60 | 0 V |
| 11 | 1.25 V | 61 | - |
| 12 | 1.25 V | 62 | 1.55 V |
| 13 | 1 V | 63 | 0 V |
| 14 | 1.55 V | 64 | 0.67 V |
| 15 | 0 V | 65 | 0.67 V |
| 16 | 0 V | 66 | 2.7 V |
| 17 | 1.24 V | 67 | 1.24 V |
| 18 | 0 V | 68 | - |
| 19 | 0 V | 69 | 0 V |
| 20 | 0 V | 70 | 1.24 V |
| 21 | 0 V | 71 | 1.24 V |
| 22 | 0 V | 72 | 0 V |
| 23 | 0 V | 73 | 0 V |
| 24 | 0 V | 74 | 0 V |
| 25 | 0 V | 75 | 1.23 V |
| 26 | 0.55 V | 76 | 1.23 V |
| 27 | 0.55 V | 77 | 1.23 V |
| 28 | 0.55 V | 78 | 0 V |
| 29 | 1.39 V | 79 | 0 V |
| 30 | 1.06 V | 80 | 0 V |
| 31 | 2.5 V | 81 | 0 V |
| 32 | 0.58 V | 82 | 2.5 V |
| 33 | 0.94 V | 83 | 0 V |
| 34 | 0.94 V | 84 | 0 V |
| 35 | 0.94 V | 85 | 1.25 V |
| 36 | 0.94 V | 86 | 2.5 V |
| 37 | 1.8 V | 87 | 2.5 V |
| 38 | 0 V | 88 | 0 V |
| 39 | 2.02 V | 89 | 2.5 V |
| 40 | 1.6 V | 90 | - |
| 41 | 1.6 V | 91 | 0.8 V |
| 42 | 1.07 V | 92 | 0.8 V |
| 43 | 1.85 V | 93 | 1.25 V |
| 44 | 2.48 V | 94 | 0.7 V |
| 45 | 1.65 V | 95 | 1.25 V |
| 46 | 1.59 V | 96 | 1.4 V |
| 47 | 1.07 V | 97 | 0.7 V |
| 48 | 2.39 V | 98 | 2.49 V |
| 49 | 1.88 V | 99 | 2.49 V |
| 50 | 1.13 V | 100 | 0 V |

| IC401 | | | |
|---------|---------|---------|---------|
| PIN NO. | VOLTAGE | PIN NO. | VOLTAGE |
| 1 | - | 51 | 0.27 V |
| 2 | 2.49 V | 52 | 0.98 V |
| 3 | 2.49 V | 53 | 2.5 V |
| 4 | 0.7 V | 54 | 2.5 V |
| 5 | 0.8 V | 55 | 2.5 V |
| 6 | - | 56 | 2.5 V |
| 7 | - | 57 | 2.39 V |
| 8 | - | 58 | 0 V |
| 9 | - | 59 | 2.4 V |
| 10 | - | 60 | 2.5 V |
| 11 | - | 61 | 2.5 V |
| 12 | 2.5 V | 62 | 2.5 V |
| 13 | 0 V | 63 | 1.27 V |
| 14 | 0 V | 64 | 0 V |
| 15 | 2.1 V | 65 | 0.64 V |
| 16 | 2.68 V | 66 | 0 V |
| 17 | 2.57 V | 67 | 1.6 V |
| 18 | 2.5 V | 68 | 1.97 V |
| 19 | 0 V | 69 | 0 V |
| 20 | 2.49 V | 70 | 0 V |
| 21 | 2.49 V | 71 | 0 V |
| 22 | 0 V | 72 | 1.4 V |
| 23 | 0 V | 73 | 0 V |
| 24 | 0 V | 74 | 0 V |
| 25 | 0 V | 75 | 1.33 V |
| 26 | 0 V | 76 | 0 V |
| 27 | 0 V | 77 | 1.4 V |
| 28 | 0 V | 78 | 0 V |
| 29 | 0 V | 79 | 0 V |
| 30 | 0 V | 80 | 0 V |
| 31 | 0 V | 81 | 2.49 V |
| 32 | 2.38 V | 82 | 0 V |
| 33 | 2.49 V | 83 | 2.47 V |
| 34 | 2.5 V | 84 | 2.47 V |
| 35 | 0 V | 85 | 0 V |
| 36 | 0 V | 86 | 2.49 V |
| 37 | 2.47 V | 87 | 0 V |
| 38 | 2.49 V | 88 | 0 V |
| 39 | 0 V | 89 | 2.49 V |
| 40 | 2.44 V | 90 | 0 V |
| 41 | 0 V | 91 | 2.47 V |
| 42 | 0 V | 92 | 2.47 V |
| 43 | 0 V | 93 | 2.5 V |
| 44 | - | 94 | 2.49 V |
| 45 | 2.34 V | 95 | 0 V |
| 46 | 1.47 V | 96 | 2.5 V |
| 47 | 2.49 V | 97 | 2.49 V |
| 48 | 2.49 V | 98 | 0 V |
| 49 | 2.49 V | 99 | 2.49 V |
| 50 | 2.49 V | 100 | 2.49 V |

| IC601 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 0 V |
| 2 | 0 V |
| 3 | 0 V |
| 4 | 2.47 V |
| 5 | 2.47 V |
| 6 | 0 V |
| 7 | 0 V |
| 8 | 0 V |
| 9 | - |
| 10 | 0 V |
| 11 | 0 V |
| 12 | 0 V |
| 13 | 0 V |
| 14 | 1.3 V |
| 15 | 0 V |
| 16 | 0 V |
| 17 | 0 V |
| 18 | 0 V |
| 19 | 0 V |
| 20 | 0 V |
| 21 | - |
| 22 | 0 V |
| 23 | 0.8 V |
| 24 | 0 V |
| 25 | 0.8 V |
| 26 | 2.46 V |
| 27 | 0 V |
| 28 | 0.65 V |
| 29 | 0 V |
| 30 | 0 V |
| 31 | 2.5 V |
| 32 | 2.5 V |
| 33 | 2.5 V |
| 34 | 0 V |
| 35 | 0 V |
| 36 | 0 V |
| 37 | 1.67 V |
| 38 | 0 V |
| 39 | 1.66 V |
| 40 | 1.3 V |
| 41 | 1.62 V |
| 42 | 0 V |
| 43 | 1.62 V |
| 44 | 1.3 V |
| 45 | 2.5 V |
| 46 | 2.5 V |
| 47 | 7.25 V |
| 48 | 1.24 V |
| 49 | 6.11 V |
| 50 | 1.24 V |
| 51 | 3.72 V |
| 52 | 1.24 V |
| 53 | 0 V |
| 54 | 0 V |
| 55 | 0 V |
| 56 | 1.3 V |
| 57 | 0 V |
| 58 | 0 V |
| 59 | 0 V |
| 60 | 0 V |
| 61 | 1.3 V |
| 62 | 0 V |
| 63 | 0 V |
| 64 | 0 V |

| IC701 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 0 V |
| 2 | 0 V |
| 3 | 0 V |
| 4 | 0 V |
| 5 | 0 V |
| 6 | 0 V |
| 7 | 0 V |
| 8 | 0 V |
| 9 | 0 V |
| 10 | 0 V |
| 11 | 0 V |
| 12 | 0 V |
| 13 | 0 V |
| 14 | 0 V |
| 15 | 0 V |
| 16 | 0 V |
| 17 | -2.48 V |
| 18 | 0 V |
| 19 | 0 V |
| 20 | 2.29 V |
| 21 | - |
| 22 | 0 V |
| 23 | 0 V |
| 24 | 0 V |

| IC501 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 0 V |
| 2 | 0 V |
| 3 | 0 V |
| 4 | 0 V |
| 5 | 2.3 V |
| 6 | 0 V |
| 7 | 0 V |
| 8 | 0 V |
| 9 | 0 V |
| 10 | 1.24 V |
| 11 | 1.22 V |
| 12 | 1.23 V |
| 13 | 0 V |
| 14 | 0 V |
| 15 | 0.27 V |
| 16 | 0.31 V |

| IC842 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 0 V |
| 2 | 2.8 V |
| 3 | 2.6 V |
| 4 | 0 V |
| 5 | 2.5 V |

| IC851 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| D | 1.28 V |
| S | 0 V |
| G | 0.55 V |

| IC852 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 1.28 V |
| 2 | 2.8 V |
| 3 | 0.47 V |
| 4 | 0 V |
| 5 | 1.17 V |
| 6 | 1.17 V |
| 7 | 1.16 V |
| 8 | 1.26 V |

| IC871 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 1.24 V |
| 2 | 2.49 V |
| 3 | 0 V |
| 4 | 1.25 V |
| 5 | 2.5 V |

| IC801 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 0 V |
| 2 | 0.8 V |
| 3 | - |
| 4 | 0 V |

| IC821 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| D | 1.28 V |
| S | 0 V |
| G | 0.3 V |

| IC822 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 1.25 V |
| 2 | 2.8 V |
| 3 | 0.7 V |
| 4 | 0 V |
| 5 | 1.2 V |
| 6 | 1.17 V |
| 7 | 1.16 V |
| 8 | 1.25 V |

| IC202 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 2.71 V |
| 2 | 1.59 V |
| 3 | 1.66 V |
| 4 | 2.47 V |
| 5 | 1.85 V |
| 6 | 0 V |
| 7 | 1.07 V |
| 8 | 1.39 V |
| 9 | 0.55 V |
| 10 | 0.55 V |
| 11 | 0.55 V |
| 12 | 2.71 V |
| 13 | 0 V |
| 14 | 0.58 V |
| 15 | 0.94 V |
| 16 | 0.94 V |
| 17 | 0.94 V |
| 18 | 0.94 V |
| 19 | 1.07 V |
| 20 | 1.8 V |
| 21 | 2.01 V |
| 22 | 1.61 V |
| 23 | 1.61 V |
| 24 | 0 V |

| IC351 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 0 V |
| 2 | 0 V |
| 3 | 4.45 V |
| 4 | 0 V |
| 5 | 0 V |
| 6 | 4.45 V |
| 7 | 0 V |
| 8 | 1.13 V |
| 9 | 4.45 V |
| 10 | 0 V |
| 11 | 1.13 V |
| 12 | 4.45 V |
| 13 | 0 V |
| 14 | 4.51 V |

| IC404 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 2.5 V |
| 2 | 2.5 V |
| 3 | 0 V |
| 4 | 0 V |
| 5 | 2.5 V |

| IC200 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 0 V |
| 2 | 2.7 V |
| 3 | 1.34 V |
| 4 | 0 V |
| 5 | 2.5 V |

| IC431 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 22.5 V |
| 2 | 2.5 V |
| 3 | 0 V |
| 4 | 0 V |

| IC353 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 2.7 V |
| 2 | 0 V |
| 3 | 0 V |
| 4 | 0 V |
| 5 | 0 V |
| 6 | 0 V |
| 7 | 0 V |
| 8 | 2.7 V |

| Q801 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 0.85 V |
| 2 | 0.9 V |
| 3 | 0.9 V |
| 4 | 0 V |
| 5 | 0 V |
| 6 | 0.77 V |

| Q802 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 0 V |
| 2 | 1.3 V |
| 3 | 0.85 V |

| Q804 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 0 V |
| 2 | 0 V |
| 3 | 0 V |
| 4 | 0 V |
| 5 | 0.58 V |
| 6 | 0.86 V |

| Q442 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 5.17 V |
| 2 | 4.66 V |
| 3 | 4.66 V |
| 4 | 1.8 V |
| 5 | 0 V |
| 6 | 0 V |

| IC873 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 0 V |
| 2 | 7.43 V |
| 3 | 2.5 V |
| 4 | 0 V |
| 5 | 4.49 V |

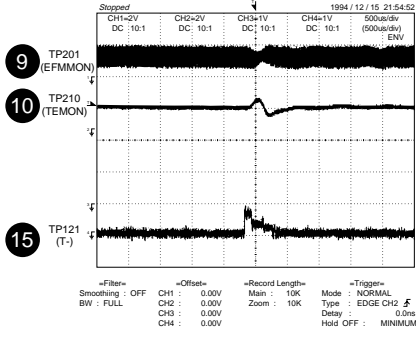
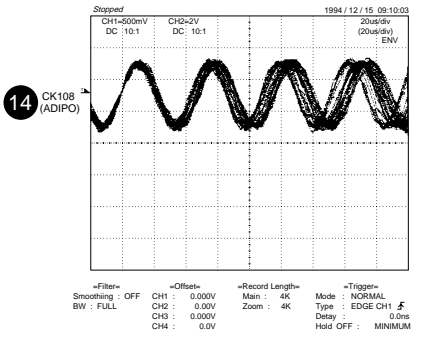
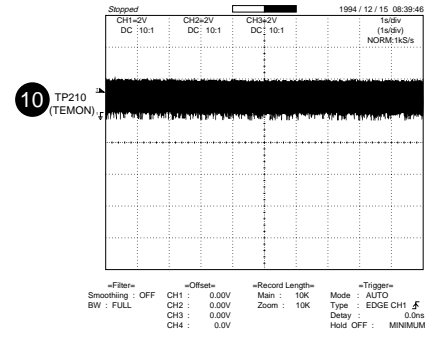
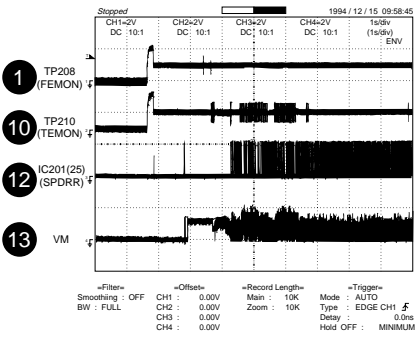
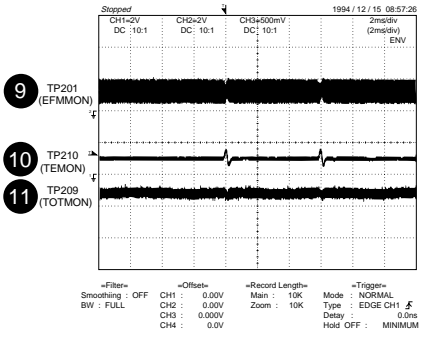
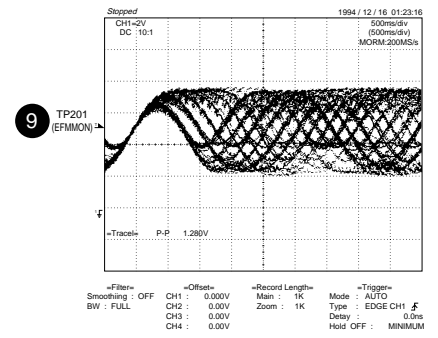
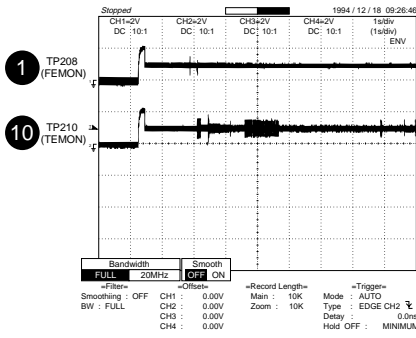
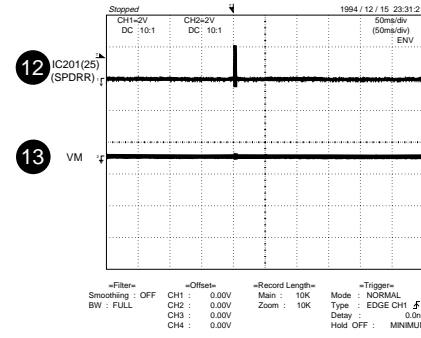
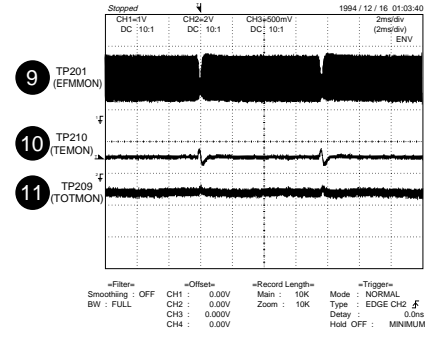
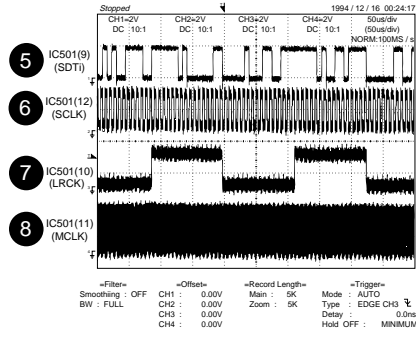
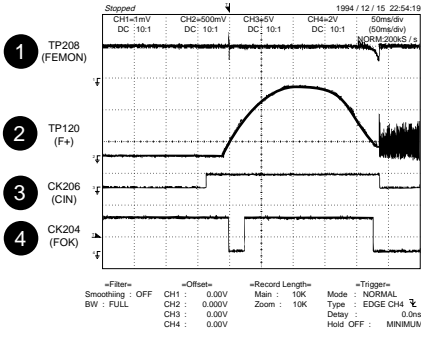
| IC841 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 1.28 V |
| 2 | 2.8 V |
| 3 | 1.36 V |
| 4 | 1.28 V |
| 5 | 0 V |

| IC354 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | - |
| 2 | - |
| 3 | 0 V |
| 4 | 0 V |
| 5 | 0 V |

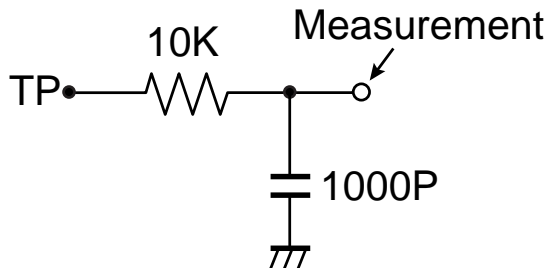
| Q252 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 1.3 V |
| 2 | 1.3 V |
| 3 | 1.3 V |
| 4 | 5.38 V |
| 5 | 4.94 V |
| 6 | - |
| 7 | - |
| 8 | 1.3 V |

| Q103 | |
|---------|---------|
| PIN NO. | VOLTAGE |
| 1 | 2.5 V |
| 2 | 2.5 V |
| 3 | 0.2 V |
| 4 | 2.5 V |
| 5 | 2.5 V |
| 6 | 2.5 V |

WAVEFORMS OF MD CIRCUIT



For TP208, TP209, and TP210, use the specific LPF, and observe the waveform.



When watching the EEM monitor (TP201)
Set MSL from 00H to 80H with EEPROM control setting. After completion restore 00H.

TROUBLESHOOTING

Use the test mode which indicates trouble causes before repairing the unit. This mode records maximum 2 past error causes as codes. Refer them for repairing.

Preparations

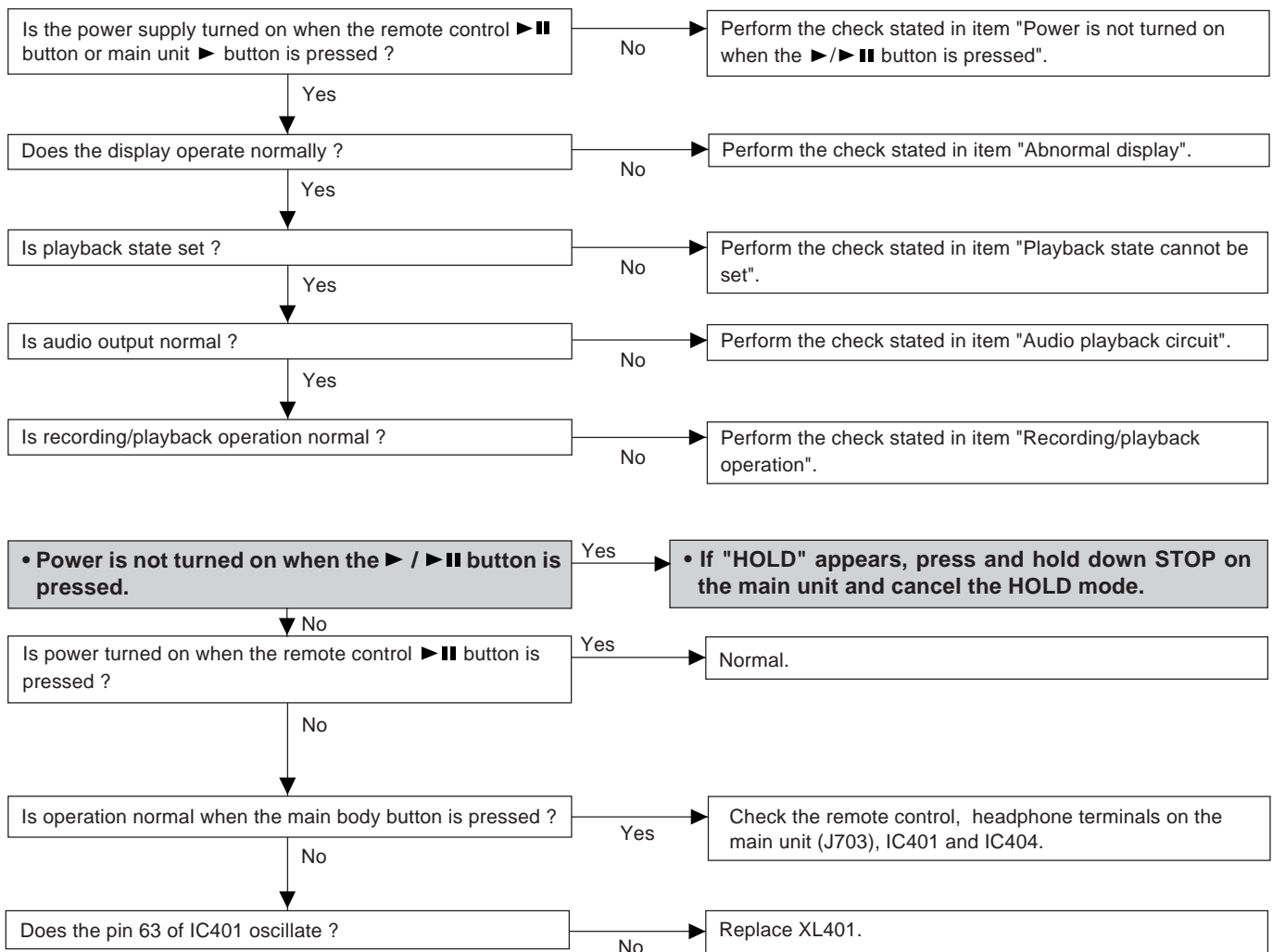
If dusts and foreign materials are accumulated on the pickup lens, playback sounds can be skipped or the TOC (Table of Contents) can't be displayed. Clean the object lens and check the playback. When lens are dirty, do the following.

Turn off the power and wipe lens softly with a cleaning paper and a little marketing so as not to damage them.

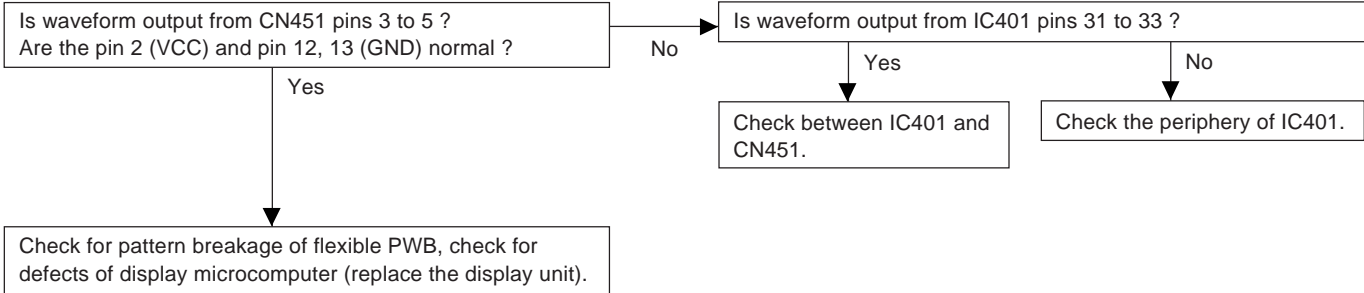
Do not touch lens with bare hands.

If the unit doesn't work.

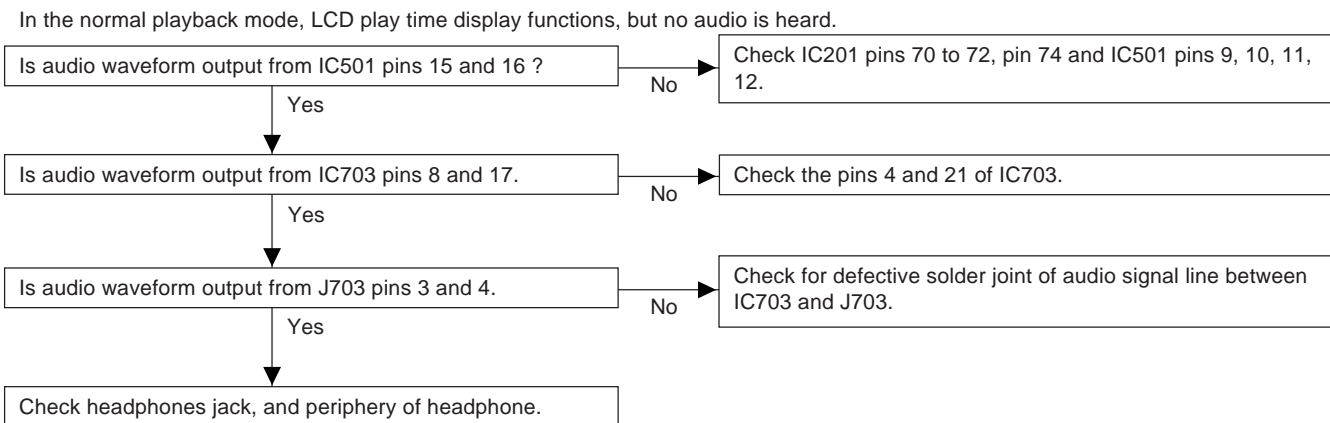
If the unit doesn't start after cleaning the pickup objects lens lens, check the unit as follows.



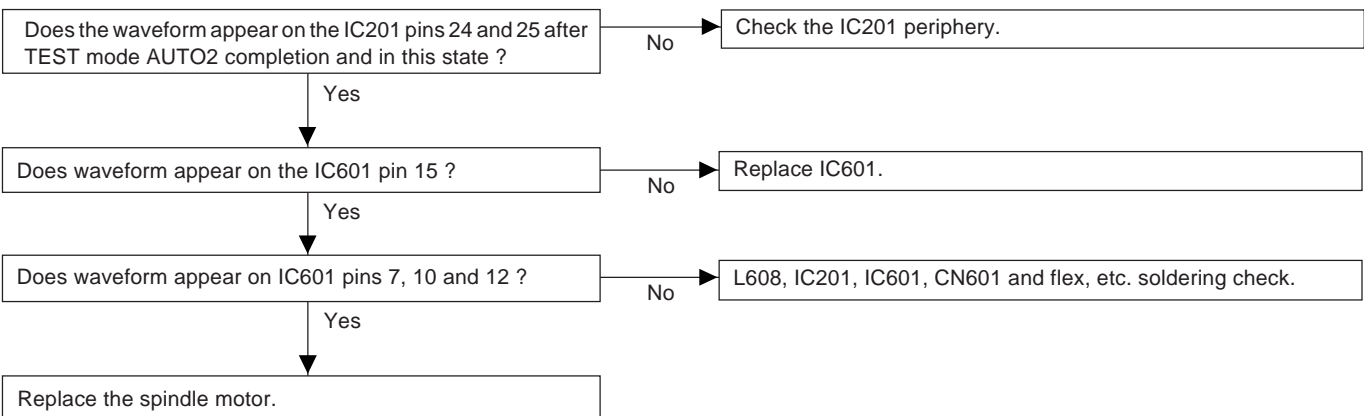
• Abnormal display.



• Audio playback circuit.



• The spindle motor fails to run. Does the head move.

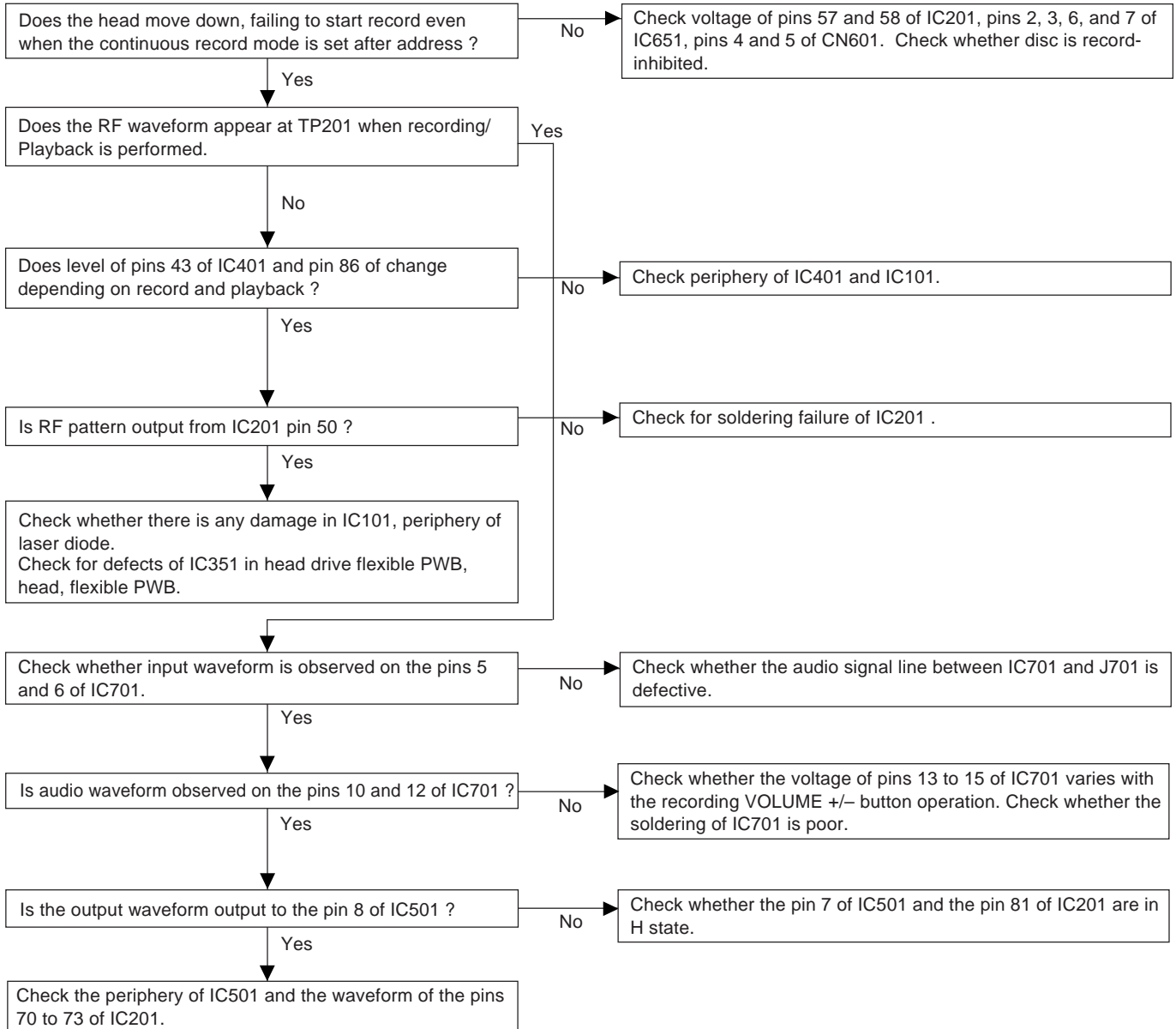


MD-MT877/MD-MT877C

• Recording/playback operation.

Insert a low reflection disc, and ascertain audio output by normal playback, and then set TEST REC mode.

Change MSL from 00H to 80H by the control setting of EEPROM. After completing the operation, return in to 00H.



FUNCTION TABLE OF IC

IC401 RH-iX0419AWZZ :System Microcomputer (IX0419AW) (1/2)

| Pin No. | Port Name | Terminal Name | Input/Output | Function |
|---------|-----------|---------------|--------------|---|
| 1 | PE5 | SYRS | Output | System LSI register selection output. |
| 2 | PE6 | _SYRD | Output | System LSI read enable output. |
| 3 | PE7 | _SYWR | Output | System LSI write enable output. |
| 4-11 | PD0-PD7 | SYD0-SYD7 | Input/Output | System LSI parallel data bus. |
| 12 | CVCC | CVCC | Input | Power supply of internal voltage drop circuit. |
| 13 | PC0 | PCLAT | Output | Record audio IC data latch output. |
| 14 | Vss | VSS | — | Ground potential. |
| 15 | PC1 | _MCPGI | Input | Microphone plug insertion detection input. |
| 16 | PC2 | _INPGI | Input | Line/digital plug insertion detection. |
| 17 | PC3 | INPGCK | Input | Line/digital plug type detection. |
| 18 | PC4 | RCPCNT | Input/Output | Record circuit power control output. |
| 19* | PC5 | TEST1 | Input | Test mode setting input 1. |
| 20* | PC6 | TEST0 | Input | Test mode setting input 0. |
| 21 | PC7 | JPNP | Input | Kana conversion/Kana input existence/nonexistence discrimination. |
| 22 | PB0 | OPICGA | Output | P.U detection sensitivity switching output. |
| 23 | PB1 | RFRCNT | Output | RF_LSI power supply ON/OFF control output. |
| 24 | TIOCC3 | BUZOUT | Output | Beep sound pulse output. |
| 25 | PB3 | SGAIN | Output | RF amp gain polarity switching output. |
| 26 | PB4 | DISCP | Output | RF amp TE polarity switching output. |
| 27* | TIOCB4 | MCMON | Output | Internal operation status monitor. |
| 28 | PB6 | RACLK | Output | Audio IC data clock output. |
| 29 | PB7 | RADAT | Output | Audio IC serial data output. |
| 30 | PA0 | CHGCNT | Output | Charge control. |
| 31 | TxD2 | DSPDAT | Output | Unit indication data output. |
| 32 | PA2 | DSPSTB | Output | Unit display strobe output. |
| 33 | SCK2 | DSPSCK | Output | Unit indication data clock output. |
| 34 | P10 | PBOPON | Output | Audio IC output stage control output. |
| 35* | P11 | P11 | Output | Reserve |
| 36 | P12/TCLKA | CIN | Input | Track cross signal/focus drive detection. |
| 37 | TCLKB | SPIN | Input | Spindle motor FG pulse detection input. |
| 38 | IRQ0 | _DINT | Input | System LSI interruption. |
| 39 | P15 | DISCPR | Input | Disc record inhibition switch input. |
| 40 | IRQ1 | ARQD | Input | Disk cap opens and closes detection/it is started and required. |
| 41* | P17 | P17 | Output | Reserve |
| 42 | AVSS | AVSS | — | A/D and D/A converter ground potential. |
| 43 | DA1 | LDVAR | Output | P.U. laser power setting output. |
| 44* | DA0 | PA0 | Output | Reserve |
| 45 | AN7 | RKCNG | Input | Remote control button operation detection input. |
| 46 | AN6 | TEMP | Input | Ambient temperature detection input. |
| 47 | AN5 | HKEY2 | Input | Unit button operation detection input 2. |
| 48 | AN4 | HKEY1 | Input | Unit button operation detection input 1. |
| 49 | AN3 | RKEY | Input | Remote control button operation detection input. |
| 50 | AN2 | STDCK | Input | Lithium battery voltage detection input. |
| 51 | AN1 | PLVDCI | Input | DC IN voltage detection input. |
| 52 | AN0 | PLVBAT | Input | DC voltage detection input. |
| 53 | Vref | VREF | — | A/D and D/A converter reference voltage. |
| 54 | AVCC | AVCC | Input | A/D and D/A converter positive power supply. |
| 55 | MD0 | MD0 | Input | Operation mode selection input 0. |
| 56 | MD1 | MD1 | Input | Operation mode selection input 1. |
| 57* | OSC2 | OSC2 | — | Sub clock (not used). |

In this unit, the terminal with asterisk mark (*) is open terminal which is not connected to the outside.

MD-MT877/MD-MT877C

IC401 RH-iX0419AWZZ :System Microcomputer (IX0419AW) (2/2)

| Pin No. | Port Name | Terminal Name | Input/Output | Function |
|---------|-----------|---------------|--------------|---|
| 58 | OSC1 | OSC1 | — | Sub clock. |
| 59 | RES | _RESET | Input | Microcomputer hard reset input. |
| 60 | NMI | DCIN | Input | DC IN edge detection. |
| 61 | STBY | _STBY | Input | Microcomputer standby input (not used). |
| 62 | VCC | VCC | Input | Positive power supply. |
| 63 | XTAL | XTAL | — | Crystal connection terminal. |
| 64 | Vss | VSS | — | Ground potential. |
| 65 | EXTAL | EXTAL | — | Crystal connection terminal. |
| 66 | FWE | FWE | Input | Flash write enable. |
| 67 | MD2 | MD2 | Input | Operation mode selection input 2. |
| 68 | PF7 | _EJSW | Input | Ejection lever operation detection input. |
| 69 | PF6 | SLCNT3 | Output | Stepping control 3. |
| 70 | PF5 | SLCNT2 | Output | Stepping control 2. |
| 71 | PF4 | SLCNT1 | Output | Stepping control 1. |
| 72 | PF3/ADTRG | _RPLAY | Input | Remote control PLAY button operation detection input. |
| 73 | PF2 | SENSE | Input | System LSI servo sense input. |
| 74 | PF1 | _FOK | Input | Focus OK signal input. |
| 75 | FP0/IRQ2 | _DCEXT | Input | DC-IN detection (level). |
| 76 | TxD0 | RMDAT | Output | Remote control indication data/PC link data output. |
| 77 | RxD0 | PCLDI | Input | PC link data input. |
| 78* | SCK0 | SCK0 | Output | Serial I/O clock output (not used). |
| 79 | P33 | _ELON | Output | EL lighting control output L. |
| 80 | P34 | LEDCTB | Output | LED lighting control (Blue). |
| 81 | P35 | _STOP | Input | Unit stop button control detection input. |
| 82 | P36 | LEDCTR | Output | LED lighting control (Orange). |
| 83 | P77 | DCNT | Output | Mechanism driver enable output. |
| 84 | P76 | BATON | Output | Battery power supply line ON/OFF. |
| 85 | P75 | LDON | Output | P.C. laser ON/OFF control output. |
| 86 | P74 | PBLAT | Output | Audio PC data clock output. |
| 87 | P73 | PCNT3 | Output | _DC IN input control output. |
| 88 | P72 | DCON | Output | DC power supply line ON/OFF. |
| 89 | P71 | PCNT2 | Output | START Tr ON/OFF. |
| 90 | P70 | EMPH0 | Output | Audio output emphasis control 0. |
| 91 | PG0/IRQ6 | _PLAY | Input | Unit PLAY button operation detection input. |
| 92 | PG1/IRQ7 | _REC | Input | Unit REC button operation detection. |
| 93 | PG2 | _XRST | Output | System LSI hard reset output. |
| 94 | PG3 | CKSTP | Output | Microcomputer standby operation monitor. |
| 95 | PG4 | LEDCTG | Output | LED lighting control (Yellow-green). |
| 96 | PE0 | _EPCS | Output | EEPROM chip selection output. |
| 97 | PE1 | EEPD | Input/Output | EEPROM serial data input/output. |
| 98 | PE2 | EEPK | Output | EEPROM serial clock output. |
| 99 | PE3 | EPRT | Output | EEPROM write protection control output. |
| 100 | PE4 | PCNT1 | Output | System power supply ON/OFF control output. |

In this unit, the terminal with asterisk mark (*) is open terminal which is not connected to the outside.

IC201 VHiLR378161-1 :Endec/Servo/Atrac (LR378161)

System LSI expansion output port

| Pin No. | Port Name | Terminal Name | Input/Output | Function | Remarks |
|---------|-----------|-------------------|--------------|---|------------------------------|
| 56* | EXPORT4 | Undecided justice | Output | Not used | Not used |
| 57 | EXPORT5 | LDCNT1 | Output | Recording head raising-lowering control output 0. | See the separate table *3. |
| 58 | EXPORT6 | LDCNT2 | Output | Recording head raising-lowering control output 1. | See the separate table *3. |
| 59 | EXPORT7 | EMPH1 | Output | Audio emphasis control output 1. | See the separate table *2. |
| 78 | EXPORT3 | HDON | Output | Recording head. | 'H': Record electric current |
| 79 | EXPORT2 | OPTCNT | Output | Optical digital input circuit ON/OFF control. | 'H': Circuit operation ON |
| 80 | EXPORT0 | DAPON | Output | D/A converter operation control output. | 'H': Operation ON |
| 81 | EXPORT1 | ADPON | Output | A/D converter operation control output. | 'H': Operation ON |

In this unit, the terminal with asterisk mark (*) is open terminal which is not connected to the outside.

***1: List of TEST port settings**

| TEST1 | TEST0 | Details |
|-------|-------|-----------------------|
| H | H | Normal mode |
| H | L | No adjustment mode |
| L | H | Test mode |
| L | L | (Settings prohibited) |

***2: List of EMPH port settings**

| EMPH1 | EMPH0 | Details |
|-------|-------|----------------|
| H | H | fs=32K: 'ON' |
| H | L | fs=48K: 'ON' |
| L | H | OFF |
| L | L | fs=44.1K: 'ON' |

***3: List of LDCNT port settings**

| LDCNT2 | LDCNT1 | Details |
|--------|--------|------------|
| H | H | Brake |
| H | L | Drive UP |
| L | H | Drive DOWN |
| L | L | Output OFF |

MD-MT877/MD-MT877C

— M E M O —

SHARP PARTS GUIDE

PORTABLE MINIDISC RECORDER

MD-MT877(S) MODEL MD-MT877C(S)

“HOW TO ORDER REPLACEMENT PARTS”

To have your order filled promptly and correctly, please furnish the following information.

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|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. No. |
| 3. PART NO. | 4. DESCRIPTION |

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Explanation of capacitors/resistors parts codes

Capacitors

VCC Ceramic type
 VCK Ceramic type
 VCT Semiconductor type
 VC •• MF Cylindrical type (without lead wire)
 VC •• MN Cylindrical type (without lead wire)
 VC •• TV Square type (without lead wire)
 VC •• TQ Square type (without lead wire)
 VC •• CY Square type (without lead wire)
 VC •• CZ Square type (without lead wire)
 VC •••••••• J .. The 13th character represents capacity difference.
 ("J" ±5%, "K" ±10%, "M" ±20%, "N" ±30%,
 "C" ±0.25 pF, "D" ±0.5 pF, "Z" +80-20%.)


If there are no indications for the electrolytic capacitors, error is ±20%.

Resistors

VRD Carbon-film type
 VRS Carbon-film type
 VRN Metal-film type
 VR •• MF Cylindrical type (without lead wire)
 VR •• MN Cylindrical type (without lead wire)
 VR •• TV Square type (without lead wire)
 VR •• TQ Square type (without lead wire)
 VR •• CY Square type (without lead wire)
 VR •• CZ Square type (without lead wire)
 VR •••••••• J .. The 13th character represents error.
 ("J" ±5%, "F" ±1%, "D" ±0.5%.)

If there are no indications for other parts, the resistors are ±5% carbon-film type.

NOTE:

Parts marked with “” are important for maintaining the safety of the set.

Be sure to replace parts with specified ones for maintaining the safety and performance of the set.

MD-MT877/MD-MT877C

| NO. | PARTS CODE | ★ PRICE RANK | DESCRIPTION |
|----------------------------|---------------|--------------|---------------------------------|
| INTEGRATED CIRCUITS | | | |
| IC101 | VHIIR3R58M/-1 | J AM | RF Signal Processor,IR3R58M |
| IC200 | VHI62GR2522-1 | J AG | 2.5V Regulator,62GR2522 |
| IC201 | VHILR378161-1 | J BQ | Endec/Servo/Atrac,LR378161 |
| IC202 | RH-IX2824AFZZ | J AX | 16MBit D-RAM,IX2824AF |
| IC251 | VHIS80808LN-1 | J AE | Reset,S-80808LNP |
| IC271 | VHI75S54FU+-1 | J AG | OP AMP,FT75S54FU |
| IC351 | VHI74ACT02T-1 | J AE | Head Driver,74ACT02FT |
| IC353 | VHIFTD2005/-1 | J AG | Head Driver,FTD2005 |
| IC354 | VHICPH5608/-1 | J AH | Head Driver,CPH5608 |
| IC401 | RH-IX0419AWZZ | J BE | System Microcomputer, IX0419AW |
| IC402 | VHI58X2404T-1 | J AF | EEPROM,58X2404T |
| IC404 | VHIN7S286P5-1 | J AE | Gate IC,N7S286P5 |
| IC431 | VHIS80820LN-1 | J AD | Reset,S-80820LNP |
| IC501 | VHIAK4551VT-1 | J AU | AD/DA Converter,AK4551VT |
| IC601 | VHIBD6640KV-1 | J BA | Motor Drive,BD6640KV |
| IC651 | VHILB1938T+-1 | J AL | Motor Drive,LB1938T |
| IC701 | VHIIR3R54N/-1 | J AQ | Audio Amp.,IR3R54N |
| IC703 | VHIIR3R59N/-1 | J AN | Audio Amp.,IR3R59N |
| IC771 | VHI62GR2322-1 | J AF | 2.3V Regulator,62GR2322 |
| IC801 | VHIS80814LN-1 | J AE | Reset,S-80814ALNP |
| IC821 | VSCPH3413+++1 | J AE | N-ch MOS FET,CPH3413 |
| IC822 | VHIIR3M14N/-1 | J AK | DC/DC Converter,IR3M14N |
| IC841 | VHI6372C281-1 | J AH | 2.8V UP Converter, XC6372C281PR |
| IC842 | VHI62GR2522-1 | J AG | 2.5V Regulator,62GR2522 |
| IC851 | VSCPH3413+++1 | J AE | N-ch MOS FET,CPH3413 |
| IC852 | VHIIR3M14N/-1 | J AK | DC/DC Converter,IR3M14N |
| IC871 | VHITC7S86FU-1 | J AE | Exclusive or Gate,TC7S86FU |
| IC873 | VHI62GR4522-1 | J AG | 4.5V Regulator,62GR4522 |

TRANSISTORS

| | | | |
|----------|---------------|------|-----------------------------------|
| Q103 | VHIFDG312P/-1 | J AD | P-ch Power MOS,FDG312 P |
| Q251 | VS2SA17457/-1 | J AB | Silicon,PNP,2SA17457 |
| Q252 | VSFTD2017+-1 | J AL | N-ch MOS FET,FTD2017 |
| Q253 | VHIRN4904//-1 | J AD | Power Select Charge Drive, RN4904 |
| Q254 | VS2SA1832GR-1 | J AC | Silicon,PNP,2SA1832 GR |
| Q261 | VHIHN1C01FU-1 | J AD | Power Transistor,HN1C01 FU |
| Q442 | VSRN4911++++1 | J AD | Digital Transistor,RN4911 |
| Q443 | VS2SC4738GR-1 | J AC | Silicon,NPN,2SC4738 GR |
| Q493 | VS2SA1832GR-1 | J AC | Silicon,PNP,2SA1832 GR |
| Q711 | VSRN1444A//-1 | J AC | Digital,NPN,RN1444 A |
| Q721 | VS2SD1979S+-1 | J AC | Silicon,NPN,2SD1979 S |
| Q801 | VHIRN4904//-1 | J AD | Power Select Charge Drive, RN4904 |
| Q802 | VSFDN339N+-1 | J AG | N-ch MOS FET,FDN339 N |
| Q803 | VS2SA17457/-1 | J AB | Silicon,PNP,2SA17457 |
| Q804 | VHIHN1C01FU-1 | J AD | Power Transistor,HN1C01 FU |
| Q805 | VS2SA1832GR-1 | J AC | Silicon,PNP,2SA1832 GR |
| Q806,807 | VHIHN1C01FU-1 | J AD | Power Transistor,HN1C01 FU |
| Q821 | VHIHN1C01FU-1 | J AD | Power Transistor,HN1C01 FU |
| Q825 | VSDTC144EE/-1 | J AB | Digital,NPN,DTC144 EE |
| Q901 | VSRN1104///-1 | J AB | Digital,NPN,RN1104 |
| QA01 | VS2SC4738GR-1 | J AC | Silicon,NPN,2SC4738 GR |

DIODES

| | | | |
|----------|----------------|------|---------------------------|
| D351 | VHDSBE803//-1 | J AD | Silicon,SBE803 |
| D431 | VHD1SS361///-1 | J AB | Silicon,1SS361 |
| D432 | VHD1SS372///-1 | J AD | Silicon,1SS372 |
| D491 | VHE015Z5R1Y-1 | J AD | Zener,5.1V,015Z5.1Y |
| D492 | VHE15AZ7R5Y-1 | J AC | Zener,7.5V,15AZ7.5Y |
| D493 | VHE015Z5R1Y-1 | J AD | Zener,5.1V,015Z5.1Y |
| D494 | VHE15AZ7R5Y-1 | J AC | Zener,7.5V,15AZ7.5Y |
| D495,496 | VHEMA8075M/-1 | J AC | Zener,7.5V,MA8075M |
| D651 | VHDF10J2E///-1 | J AC | Silicon,F10J2E |
| D771,772 | VHDF10J2E///-1 | J AC | Silicon,F10J2E |
| D801 | VHDRB521S30-1 | J AC | Silicon,RB521S30 |
| D821 | VHDD1FH3++++1 | J AE | Schottky,D1FH3 |
| D822 | VHDHRB0103B-1 | J AC | Silicon,HRB0103B |
| D831,832 | VHDHRB0103B-1 | J AC | Silicon,HRB0103B |
| D841 | VHDF10J2E///-1 | J AC | Silicon,F10J2E |
| D842 | VHDHRB0103B-1 | J AC | Silicon,HRB0103B |
| D851,852 | VHDF10J2E///-1 | J AC | Silicon,F10J2E |
| D861,862 | VHDF10J2E///-1 | J AC | Silicon,F10J2E |
| LEDA02 | VHPTLGU1008-1 | J AE | LED,Yellow-green,TLGU1008 |
| LEDA03 | VHPCL190HBX-1 | J AF | LED,Blue,CL190HBX |
| LEDA04 | VHPTLOU1008-1 | J AE | LED,Orange,TLOU1008 |

COILS

| | | | |
|----------|---------------|------|---------------------------|
| L100 | VPBNN100K0000 | J AC | 10 μH |
| L103 | RCILC0353AFZZ | J AB | Tip Solid Induction,100mA |
| L171 | RCILC0356AFZZ | J AC | 10 μH |
| L202 | VPBNN100K0000 | J AC | 10 μH |
| L204 | RCILC0353AFZZ | J AB | Tip Solid Induction,100mA |
| L452 | RCILC0352AFZZ | J AB | Tip Impeder,150mA |
| L453,454 | RCILC0353AFZZ | J AB | Tip Solid Induction,100mA |
| L456~458 | RCILC0353AFZZ | J AB | Tip Solid Induction,100mA |
| L491 | VRS-TV2AB330J | J AA | 33 ohms,1/10W |
| L601,602 | RCILC0372AFZZ | J AC | 22 μH,Choke |
| L603 | RCILC0358AFZZ | J AC | 4.7 μH,Choke |
| L604 | RCILC0372AFZZ | J AC | 22 μH,Choke |
| L608 | RCILC0356AFZZ | J AC | 10 μH |
| L702,703 | RCILC0353AFZZ | J AB | Tip Solid Induction,100mA |
| L704 | RCILC0352AFZZ | J AB | Tip Impeder,150mA |
| L711 | RCILC0352AFZZ | J AB | Tip Impeder,150mA |
| L712~714 | RCILC0353AFZZ | J AB | Tip Solid Induction,100mA |
| L821 | RCILC0005AWZZ | J AF | 10 μH,Choke |
| L841 | RCILC0358AFZZ | J AC | 4.7 μH,Choke |
| L851 | RCILC0005AWZZ | J AF | 10 μH,Choke |

VIBRATORS

| | | | |
|-------|---------------|------|---------------------|
| XL201 | RCRSC0028AFZZ | J AH | Crystal,33.8688 MHz |
| XL401 | RCRM-0039AWZZ | J AF | Ceramic,3.68 MHz |

CAPACITORS

| | | | |
|----------|---------------|------|----------------------------------|
| C100 | VCSAPR0JJ106M | J AD | 10 μF,6.3V,Electrolytic,Tantalum |
| C102,103 | VCKYCY0JB105K | J AC | 1 μF,6.3V |
| C106 | VCKYCY0JB105K | J AC | 1 μF,6.3V |
| C107 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C108,109 | VCKYCY0JB105K | J AC | 1 μF,6.3V |
| C110 | VCKYCY1AB224K | J AB | 0.22 μF,10V |
| C111 | VCKYCY0JB105K | J AC | 1 μF,6.3V |
| C112 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C113 | VCKYCY0JB105K | J AC | 1 μF,6.3V |
| C114 | VCCCCZ1HH5R0C | J AB | 5 pF (CH),50V |
| C121,122 | VCKYCY1HB221K | J AB | 220 pF,50V |
| C123,124 | VCKYCY1HB331K | J AB | 330 pF,50V |
| C130,131 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C132,133 | VCKYCY1AB224K | J AB | 0.22 μF,10V |
| C151 | VCKYCY1CB103K | J AB | 0.01 μF,16V |
| C165 | VCKYCY1AB333K | J AB | 0.033 μF,10V |
| C171,172 | RC-SZ0002AWZZ | J AD | 33 μF,6.3V,Electrolytic |
| C200 | VCKYCY0JB105K | J AC | 1 μF,6.3V |
| C201 | VCSAPR0JJ106M | J AD | 10 μF,6.3V,Electrolytic,Tantalum |
| C202 | VCSATK0JJ476M | J AD | 47 μF,6.3V,Electrolytic,Tantalum |
| C203 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C204 | VCKYCY1AB474K | J AC | 0.47 μF,10V |
| C205 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C207 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C209,210 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C211 | VCCCCZ1HH5R0C | J AB | 5 pF (CH),50V |
| C212 | VCCCCZ1HH8R0D | J AB | 8 pF (CH),50V |
| C251,252 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C253 | VCKYCY1CB103K | J AB | 0.01 μF,16V |
| C270 | VCKYCY0JB105K | J AC | 1 μF,6.3V |
| C272~274 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C291 | VCKYCY0JB105K | J AC | 1 μF,6.3V |
| C292 | VCKYCY1CB103K | J AB | 0.01 μF,16V |
| C351 | VCCCCY1HH470J | J AA | 47 pF (CH),50V |
| C353 | VCSAPR0JJ106M | J AD | 10 μF,6.3V,Electrolytic,Tantalum |
| C354 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C357 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C361 | VCKYTV1HB393K | J AB | 0.039 μF,50V |
| C401 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C431 | VCKYCY1AB474K | J AC | 0.47 μF,10V |
| C451 | VCKYCY1EB223K | J AB | 0.022 μF,25V |
| C454 | VCKYCY1HB222K | J AB | 0.0022 μF,50V |
| C491 | VCKYTV1CB104K | J AA | 0.1 μF,16V |
| C492 | VCKYCY0JB105K | J AC | 1 μF,6.3V |
| C493 | VCKYCY1AB474K | J AC | 0.47 μF,10V |
| C500 | VCSAPR0JJ106M | J AD | 10 μF,6.3V,Electrolytic,Tantalum |
| C501,502 | VCKYCY1HB222K | J AB | 0.0022 μF,50V |
| C503 | VCSAPR1AJ335M | J AD | 3.3 μF,10V,Electrolytic,Tantalum |
| C505,506 | VCKYCY1HB102K | J AB | 0.001 μF,50V |
| C509,510 | VCKYCY0JB105K | J AC | 1 μF,6.3V |
| C511 | VCKYCY1AB104K | J AB | 0.1 μF,10V |
| C600 | RC-SZ0001AWZZ | J AG | 22 μF,6.3V,Electrolytic,Tantalum |

MD-MT877/MD-MT877C

| NO. | PARTS CODE | ★ | PRICE RANK | DESCRIPTION |
|----------|---------------|---|------------|-----------------|
| R810 | VRS-CZ1JB223J | J | AB | 22 kohms,1/16W |
| R812 | VRS-CZ1JB104J | J | AA | 100 kohm,1/16W |
| R813 | VRS-CZ1JB222J | J | AB | 2.2 kohms,1/16W |
| R814 | VRS-CZ1JB273J | J | AA | 27 kohms,1/16W |
| R815-817 | VRS-CZ1JB104J | J | AA | 100 kohm,1/16W |
| R818 | VRS-CZ1JB473J | J | AA | 47 kohms,1/16W |
| R821 | VRS-CZ1JB222J | J | AB | 2.2 kohms,1/16W |
| R822 | VRS-CZ1JB104J | J | AA | 100 kohm,1/16W |
| R823 | VRS-CZ1JB274J | J | AB | 270 kohms,1/16W |
| R824 | VRS-CZ1JB103J | J | AA | 10 kohm,1/16W |
| R825 | VRS-CZ1JB394D | J | AA | 390 kohms,1/16W |
| R826 | VRS-CZ1JB395J | J | AA | 3.9 Mohms,1/16W |
| R827 | VRS-CZ1JB274D | J | AK | 270 kohms,1/16W |
| R828 | VRS-CZ1JB222J | J | AB | 2.2 kohms,1/16W |
| R829 | VRS-CZ1JB104J | J | AA | 100 kohm,1/16W |
| R831,832 | VRS-CZ1JB184D | J | AB | 180 kohms,1/16W |
| R833 | VRS-CZ1JB470J | J | AB | 47 ohms,1/16W |
| R834 | VRS-CZ1JB155J | J | AA | 1.5 Mohms,1/16W |
| R841 | VRS-CZ1JB104J | J | AA | 100 kohm,1/16W |
| R844 | VRS-CZ1JB470J | J | AB | 47 ohms,1/16W |
| R850 | VRS-CZ1JB223J | J | AB | 22 kohms,1/16W |
| R853 | VRS-CZ1JB274J | J | AB | 270 kohms,1/16W |
| R854 | VRS-CZ1JB103J | J | AA | 10 kohm,1/16W |
| R855 | VRS-CZ1JB184D | J | AB | 180 kohms,1/16W |
| R857 | VRS-CZ1JB564D | J | AA | 560 kohms,1/16W |
| R871 | VRS-CZ1JB103J | J | AA | 10 kohm,1/16W |
| R881 | VRS-CZ1JB183J | J | AA | 18 kohms,1/16W |
| R882 | VRS-CZ1JB103J | J | AA | 10 kohm,1/16W |
| R903 | VRS-CZ1JB471J | J | AA | 470 ohms,1/16W |
| R904 | VRS-CZ1JB103J | J | AA | 10 kohm,1/16W |
| R905 | VRS-CZ1JB104J | J | AA | 100 kohm,1/16W |
| R906 | VRS-CZ1JB274J | J | AB | 270 kohms,1/16W |
| R907 | VRS-CZ1JB184J | J | AB | 180 kohms,1/16W |
| R908 | VRS-CZ1JB104J | J | AA | 100 kohm,1/16W |
| R909 | VRS-CZ1JB103J | J | AA | 10 kohm,1/16W |
| R920 | VRS-CZ1JB104J | J | AA | 100 kohm,1/16W |
| RA01 | VRS-CY1JB562J | J | AA | 5.6 kohms,1/16W |
| RA02 | VRS-CY1JB822J | J | AA | 8.2 kohms,1/16W |
| RA03 | VRS-CY1JB183J | J | AA | 18 kohms,1/16W |
| RA04 | VRS-CY1JB563J | J | AA | 56 kohms,1/16W |
| RA05 | VRS-CY1JB562J | J | AA | 5.6 kohms,1/16W |
| RA06 | VRS-CY1JB822J | J | AA | 8.2 kohms,1/16W |
| RA07 | VRS-CY1JB183J | J | AA | 18 kohms,1/16W |
| RA08 | VRS-CY1JB563J | J | AA | 56 kohms,1/16W |
| RA12 | VRS-CY1JB333F | J | AA | 33 kohms,1/16W |
| RA13,14 | VRS-CY1JB183F | J | AA | 18 kohms,1/16W |
| RA15 | VRS-CY1JB103J | J | AA | 10 kohm,1/16W |
| RA16 | VRS-CY1JB331J | J | AA | 330 ohms,1/16W |

OTHER CIRCUITRY PARTS

| | | | | |
|--------|---------------|---|----|---------------------------------|
| CN101 | QCNCW046XAWZZ | J | AM | Socket,22Pin |
| CN451 | QCNCW862PAFZZ | J | AG | Socket,14Pin |
| CN601 | QCNCW862LAFZZ | J | AF | Socket,11Pin |
| CNA01 | QCNCW047GAWZZ | J | AF | Socket,7Pin |
| △ F841 | QFS-L401AAFNZ | J | AE | Square Tip Type Fuse,0.4A,DC60V |
| J701 | VHLGP1FD202-1 | J | AT | Jack,Optical/Line |
| J702 | QJAKM0018AWZZ | J | AG | Jack,Mic In |
| J703 | QJAKM0015AWZZ | J | AL | Jack,Remote Control/Earphones |
| M901 | RMOTV0031AWZZ | J | AW | Motor [Spindle] |
| M902 | RMOTS0002AWZZ | J | AT | Motor [Sled] |
| M903 | RMOTV0033AWZZ | J | AW | Motor [Lift] |
| SW401 | QSW-M0010AWZZ | J | AE | Switch,Key Type [Eject] |
| SW901 | QSW-M0008AWZZ | J | AF | Switch,Push Type [Disc Protect] |
| SWA01 | QSW-K0237AFZZ | J | AC | Switch,Key Type [Record] |
| SWA02 | QSW-K0237AFZZ | J | AC | Switch,Key Type [Play] |
| SWA03 | QSW-K0237AFZZ | J | AC | Switch,Key Type [Bass] |
| SWA04 | QSW-K0237AFZZ | J | AC | Switch,Key Type [Edit] |
| SWA05 | QSW-K0237AFZZ | J | AC | Switch,Key Type [Display] |
| SWA06 | QSW-K0237AFZZ | J | AC | Switch,Key Type [Volume -] |
| SWA07 | QSW-K0237AFZZ | J | AC | Switch,Key Type [Volume +] |
| SWA08 | QSW-K0237AFZZ | J | AC | Switch,Key Type [Stop] |
| SWA09 | QSW-K0237AFZZ | J | AC | Switch,Key Type [Mode] |
| SWA10 | QSW-K0237AFZZ | J | AC | Switch,Key Type [Fast Reverse] |
| SWA11 | QSW-K0237AFZZ | J | AC | Switch,Key Type [Fast Forward] |
| SWA12 | QSW-K0237AFZZ | J | AC | Switch,Key Type [Enter] |
| SWA13 | QSW-M0009AWZZ | J | AE | Switch,Push Type [Open/Close] |

MD MECHANISM PARTS

| | | | | |
|---|---------------|---|----|-------------|
| 1 | NGERH0125AWZZ | J | AB | Wheel,Drive |
| 2 | NSFTD0007AWZZ | J | AL | Screw,Drive |

| NO. | PARTS CODE | ★ | PRICE RANK | DESCRIPTION |
|------|---------------|---|------------|-------------------------|
| 3 | RCILH0003AWM1 | J | AT | Magnetic Head Ass'y |
| △ 4 | RCTRH8210AFZZ | J | BM | Optical Pickup |
| 5 | QPWBH0010AWZZ | J | AH | Mechanism Flexible PWB |
| 6 | LHLDX3008AWM2 | J | AM | Cartridge Holder Ass'y |
| 7 | MLEVF0058AWFW | J | AD | Lift Lever |
| 9 | MSPRT0041AWFJ | J | AB | Spring,Eject Lever |
| 10 | LANGK0211AWZZ | J | AC | Bracket,Cancel |
| 11 | LCHSM0107AWM1 | J | AL | Main Chassis Ass'y |
| 12 | MSPRP0044AWFJ | J | AB | Spring,Thrust Plate |
| 13 | MLEVF0056AWFW | J | AC | Lift Connection Lever |
| 14 | MLEVF0057AWFW | J | AC | Lift Working Lever |
| 15 | NGERH0096AWZZ | J | AC | Gear,Drive |
| 16 | MSPRP0043AWFJ | J | AB | Spring,Grip |
| 17 | NBRGC0004AWZZ | J | AB | Metal |
| 501 | LX-BZ0049AWZZ | J | AB | Screw,ø1.4×1.8mm |
| 502 | LX-BZ0050AWZZ | J | AB | Screw,ø1.4×2.5mm |
| 503 | LX-BZ0051AWZZ | J | AB | Screw,ø1.4×3.8mm |
| 504 | LX-BZ0823AFZZ | J | AA | Screw,ø1.4×1.2mm |
| 505 | LX-JZ0027AWZZ | J | AA | Screw,ø1.7×3.5mm |
| 506 | LX-JZ0167AFZZ | J | AB | Screw,ø1.4×3.0mm |
| 507 | LX-WZ9290AFZZ | J | AA | Washer,ø0.8×ø2.4×0.25mm |
| 508 | LX-WZ9296AFZZ | J | AA | Washer,ø1.5×ø3.5×0.25mm |
| M901 | RMOTV0031AWZZ | J | AW | Motor [Spindle] |
| M902 | RMOTS0002AWZZ | J | AT | Motor [Sled] |
| M903 | RMOTV0033AWZZ | J | AW | Motor [Lift] |

CABINET PARTS

| | | | | |
|-----|---------------|---|----|--------------------------------------|
| 201 | GCABA3008AWM1 | J | BA | Top Cabinet Ass'y |
| 202 | GCABB3010AWM1 | J | AU | Bottom Cabinet Ass'y [MD-MT877 (S)] |
| 202 | GCABB3013AWM1 | J | | Bottom Cabinet Ass'y [MD-MT877C (S)] |
| 203 | GCABA1213AWSA | J | AM | Center Cabinet |
| 204 | GFTAB1029AWSA | J | AE | Cover,Battery |
| 205 | HDECQ0649AWSA | J | AL | Decoration Plate |
| 207 | PSHEZ0095AWZZ | J | AE | Sheet,Button |
| 208 | GMADI0007AWSA | J | AC | LED Window A |
| 209 | GMADI0008AWSA | J | AC | LED Window B |
| 210 | GMADI0009AWSA | J | AC | LED Window C |
| 212 | LANGT0072AWFW | J | AB | Bracket,Center Cabinet |
| 213 | JKNBZ0757AWSA | J | AQ | Button,Operation A |
| 214 | JKNBZ0758AWSA | J | AK | Button,Operation B |
| 215 | HDECQ0650AWSA | J | AF | Decoration Plate |
| 216 | LHLDZ1291AWZZ | J | AF | Holder,LCD |
| 217 | RUNTZ0025AWZZ | J | BB | LCD Ass'y |
| 218 | JKNBK0081AWSA | J | AE | Knob,Eject |
| 219 | LHLDZ3017AWM2 | J | AQ | Main Frame Ass'y |
| 220 | LANGZ0031AWM2 | J | AG | Battery Terminal,+ |
| 221 | LHLDZ1282AWZZ | J | AF | Holder,Battery |
| 223 | GCOVH1021AWZZ | J | AB | Cover,Extension Terminal B |
| 224 | GCOVH1020AWZZ | J | AB | Cover,Extension Terminal A |
| 225 | QTANB9028AWFQ | J | AC | Extension Terminal,A |
| 226 | QTANB9032AWFQ | J | AG | Battery Terminal,- |
| 227 | PSHEZ0085AWZZ | J | AC | Sheet,Insulation |
| 228 | LANGT0080AWFW | J | AC | Bracket,Lock |
| 229 | GCOVH1023AWZZ | J | AB | Cover,Charging Stand |
| 230 | PSHEZ0098AWZZ | J | AB | Sheet,Flexible PWB Protection |
| 231 | PSHET0046AWZZ | J | AD | Sheet,PWB |
| 232 | PSPA0031AWZZ | J | AB | Spacer,PWB B |
| 233 | PCUSG0068AWZZ | J | AB | Cushion,Terminal |
| 234 | QTANB9029AWFQ | J | AC | Charging Stand Terminal |
| 235 | PSHEZ0105AWZZ | J | AA | Sheet,Main Frame |
| 236 | PSPA0028AWZZ | J | AA | Spacer,PWB A |
| 237 | PSPA0027AWZZ | J | AB | Spacer,Main Frame |
| 238 | PSHET0052AWZZ | J | AC | Sheet,Button Guide |
| 239 | PSHET0053AWZZ | J | AA | Sheet,Button |
| 240 | PSHET0059AWZZ | J | AA | Sheet,Open/Close Button |
| 241 | PCUSG0078AWZZ | J | | Cushion,Bracket |
| 242 | PSHET0060AWZZ | J | | Sheet,Button |
| 601 | LX-BZ0047AWFC | J | AB | Screw,ø1.4×1.5mm |
| 602 | LX-BZ0048AWFN | J | AC | Screw,ø1.4×2.5mm |
| 603 | LX-BZ1008AFFC | J | AB | Screw,ø1.4×2mm |
| 604 | LX-BZ0800AFZZ | J | AA | Screw,ø1.4×2.5mm |

PACKING PARTS

(MD-MT877 (S) Except for U.S.A./MD-MT877C (S) for Canada)

| | | | |
|---------------|---|----|------------------------------|
| SPAKA0284AWZZ | J | AE | Packing Add. |
| SPAKC1155AWZZ | J | | Packing Case [MD-MT877 (S)] |
| SPAKC1229AWZZ | J | | Packing Case [MD-MT877C (S)] |

| NO. | PARTS CODE | ★ PRICE RANK | DESCRIPTION |
|-----|---------------|--------------|----------------------------------|
| | SPAKZ0630AWZZ | J | Pad,AC Adaptor |
| | SPAKZ0692AWZZ | J AB | Sheet,Bubble |
| | SSAKA0009AWZZ | J AA | Polyethylene Bag,Battery Charger |

ACCESSORIES

△

| | | | |
|--|---------------|------|---|
| | GCASZ0002AWSA | J AL | Battery Case |
| | QCNWG0029AWZZ | J | Connecting Cord,RCA Type (From Serial No.105xxxxx) |
| | QCNWG0382AFZZ | J AK | Connecting Cord,RCA Type (To Serial No.104xxxxx) |
| | QCNWG0422AFZZ | J AQ | Connecting Cord,Optical Type |
| | RADPA3048AWZZ | J AW | AC Adaptor |
| | RPHOH0176AFSA | J AT | Earphones |
| | RRMCW0011AWSA | J BK | Remote Control (To Serial No.102xxxxx) |
| | RRMCW0012AWSA | J | Remote Control (From Serial No.103xxxxx) |
| | RUNTZ0032AWM1 | J BL | Battery Charger |
| | TINSK0115AWZZ | J AH | Operation Manual [MD-MT877C (S)] |
| | TINSZ0639AWZZ | J AE | Operation Manual [MD-MT877 (S)] |
| | TINSZ0640AWZZ | J AC | Quick Guide [MD-MT877 (S)] |
| | TLABZ0695AWZZ | J AA | Label,Caution (Battery Case) |
| | UBAGC0005AWZZ | J AD | Battery Carrying Case |
| | UBAGC0006AWSA | J AH | Carrying Case |
| | UBATM0006AWSA | J AY | Battery |

P.W.B. ASSEMBLY (Not Replacement Item)

| | | | |
|-------|----------------|-----|---------|
| PWB-A | 92LPWB3664MDSS | J — | Main |
| PWB-B | 92LPWB3532KEYS | J — | LCD/Key |

OTHER SERVICE PARTS

| | | | |
|--|---------------|------|--|
| | UDSKM0001AFZZ | J AZ | Recording Mini Disc |
| | 88GMMD-110 | J BV | High Reflection Disc MMD-110 (TEAC Test MD) |
| | 88GMMD-213A | J BT | Low Reflection Disc MMD-213A (TEAC Test MD) |

BATTEY CHARGER PARTS

| | | | |
|-------|---------------|------|---|
| 22 | RUNTZ0032AWM1 | J BL | Battery Charger |
| 22- 1 | GCABA1223AW01 | J | Front Cabinet |
| 22- 2 | — | — | Back Cabinet Unit (Not Replacement Unit) |
| 22- 3 | LHLDZ1283AWSA | J AE | Remote Control Stand |
| 22- 4 | LHLDZ1285AWSA | J AF | Stand |
| 22- 5 | GLEGG0002AWZZ | J AB | Cushion A |
| 22- 6 | GLEGG0003AWZZ | J AB | Cushion B |
| 22- 7 | XEBSN20P05000 | J AA | Screw,ø2×5mm |
| 22- 8 | TLABM0107AWZZ | J | Label,Specifications |
| 22- 9 | TLABZ0855AWZZ | J | Label,Caution |

MD-MT877/MD-MT877C

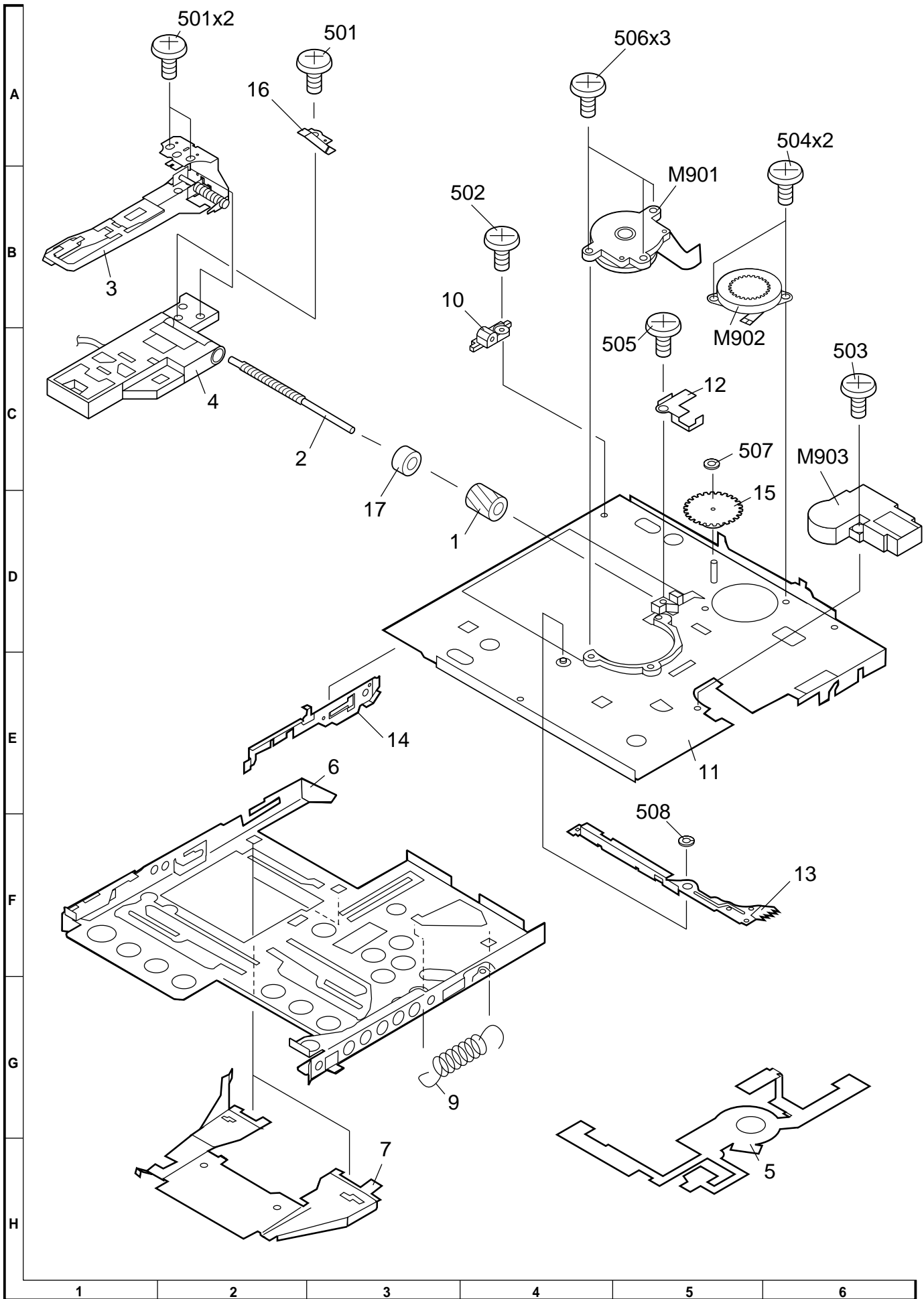


Figure 5 MD MECHANISM EXPLODED VIEW

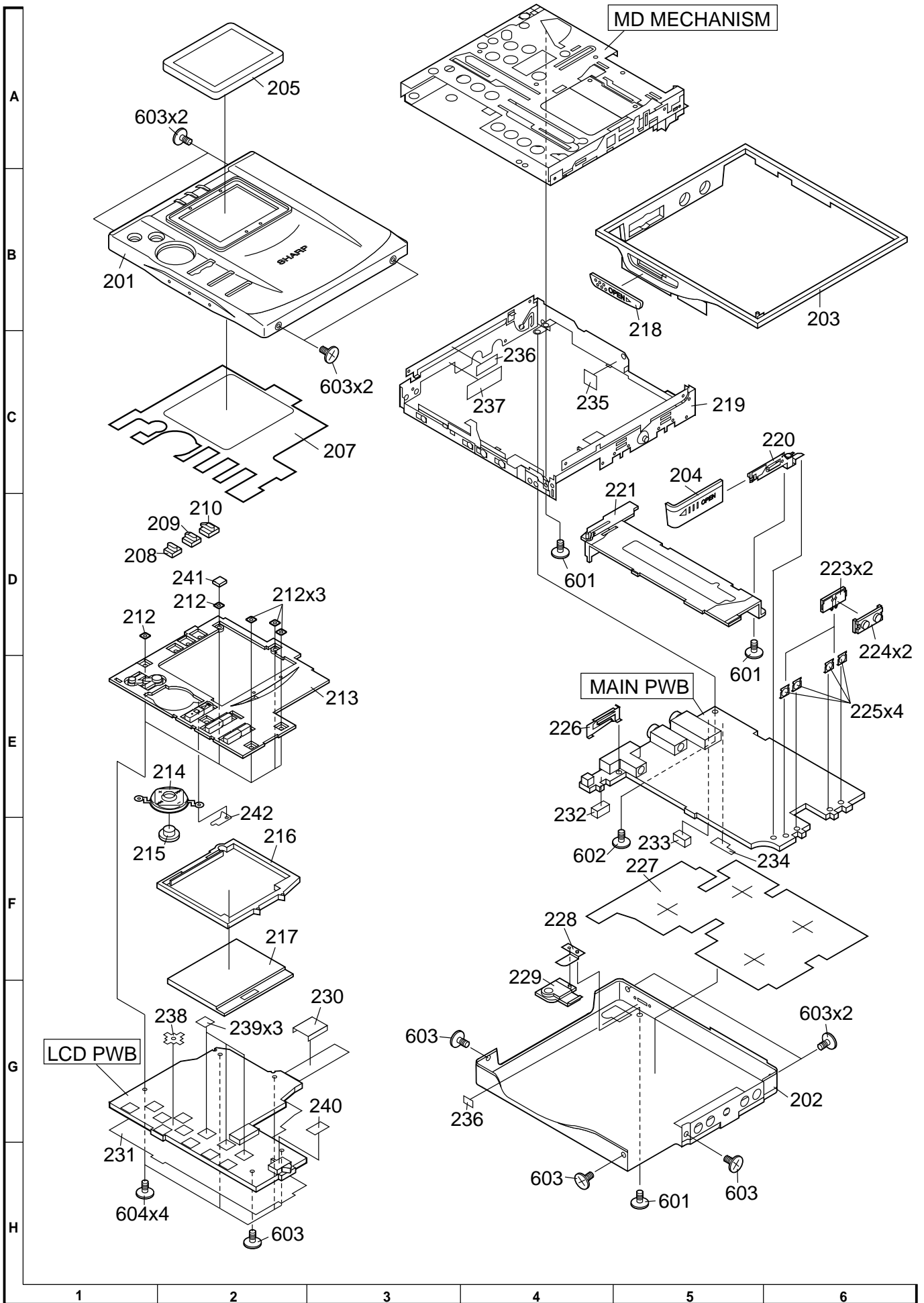


Figure 6 CABINET EXPLODED VIEW

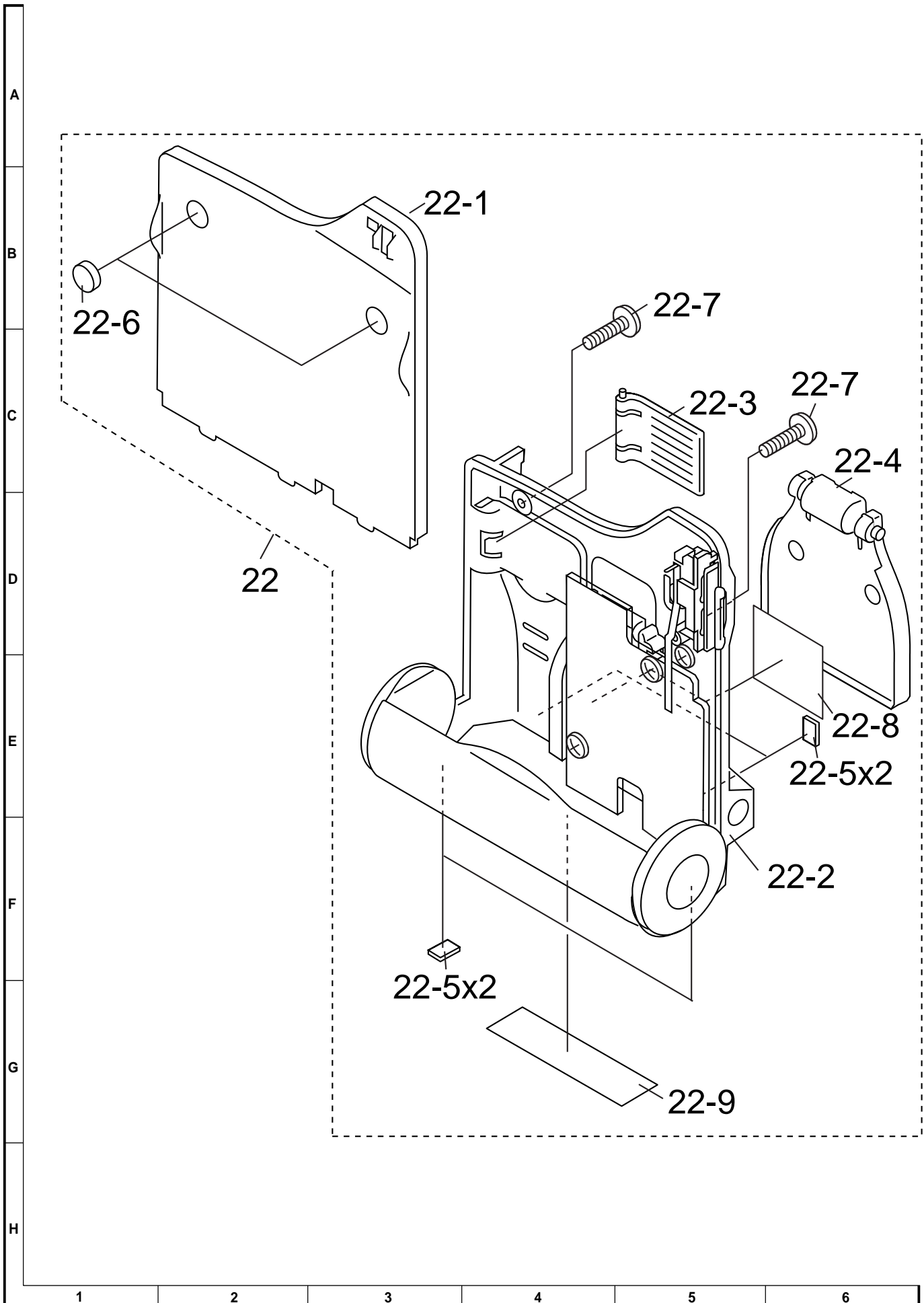
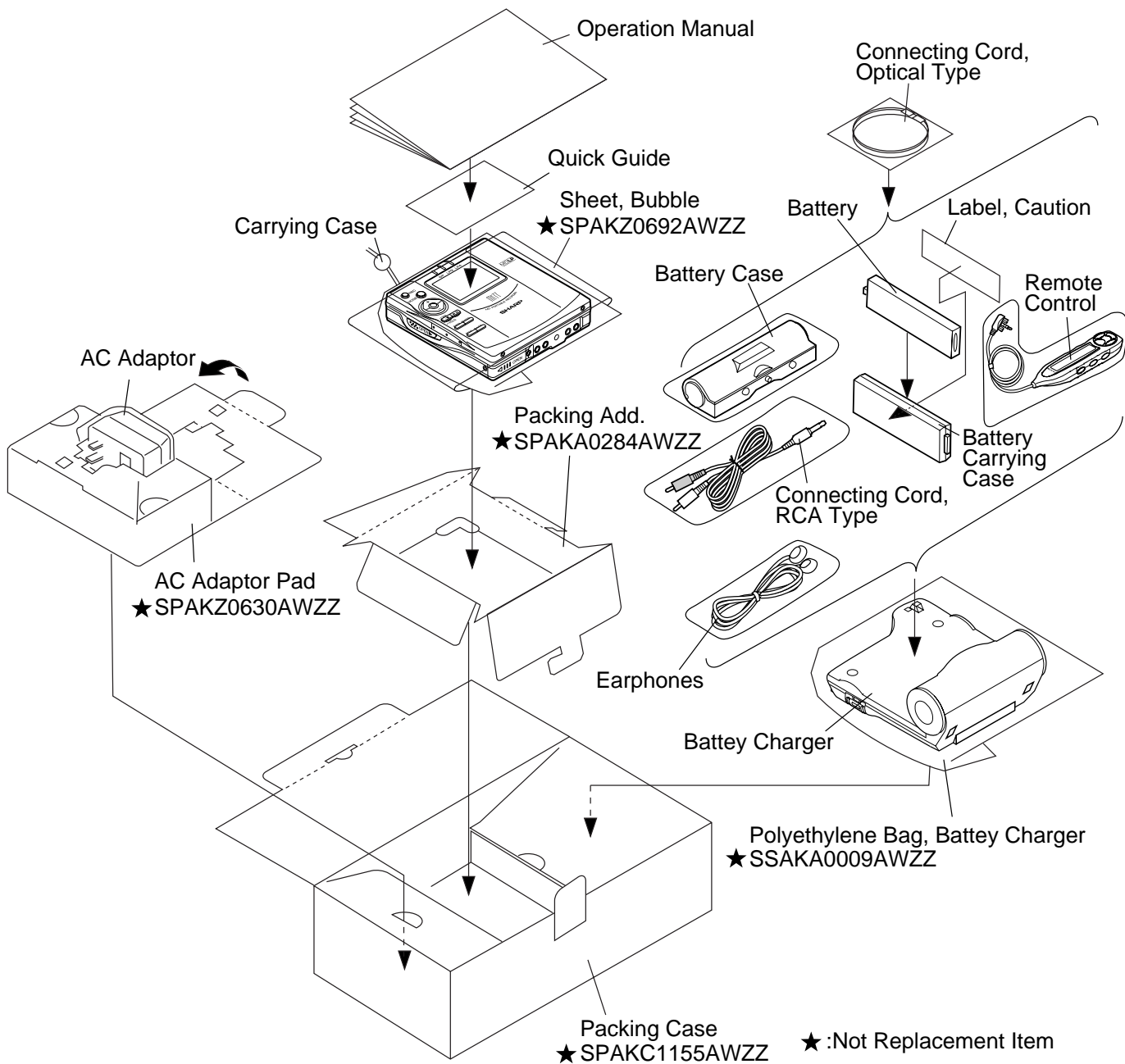


Figure 7 BATTERY CHARGER EXPLODED VIEW

PACKING OF THE SET (MD-MT877(S) FOR U.S.A. ONLY)

| Setting position of switches and knobs | | |
|--|------|--------|
| Remote Control | HOLD | CANCEL |



MD-MT877/MD-MT877C

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— M E M O —

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